GREATER TORONTO AREA URBAN STRUCTURE CONCEPTS STUDY

BACKGROUND REPORT NO. 6 HUMAN SERVICES

Prepared for

The Greater Toronto Coordinating Committee

JUNE, 1990

IBI
GROUP

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IBI GROUP
in association with
A.R.A. CONSULTANTS
D.W. LATTER & ASSOCIATES
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June 8, 1990

Mr. E. M. Fleming
Chairman
Greater Toronto Coordinating Committee
5 Park Home Avenue
Suite 210
North York, Ontario
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Dear Mr. Fleming:

Background Paper No. 6: Human Services

This is the sixth in a series of background reports for the Greater Toronto Area Urban Structure Concepts Study. The background reports in the series are as follows:

1. Description of Urban Structure Concepts;
2. Minimal Growth Option;
3. Transportation Systems;
4. Water, Sewers and Solid Waste;
5. Greening/Environment;
6. Human Services;
7. Comparison of Urban Structure Concepts;
8. Public Attitudes Survey (to follow in Fall, 1990).

The overall study results are presented in a separate report titled Summary Report: Greater Toronto Area Urban Structure Concepts Study.

This background report describes the manner in which human services (health, education, culture/recreation, social services, protection) would be expanded to accommodate 6 million people in the GTA by 2021, under each of the three postulated urban structure concepts. The alternative concepts are compared, in terms of their human service requirements and opportunities, based on three major criteria: capital costs (which are estimated in quantitative terms); operating costs (discussed in qualitative terms) and service effectiveness (including the level of service provided, accessibility, and related quality of life factors).

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This study breaks new ground by drawing together demand, supply, cost and effectiveness findings for three quite different future urban forms for the entire GTA including both "hard" and "soft" infrastructure. There is, therefore, little precedent against which to assess the results, some of which are perhaps unexpected or at least thought-provoking. The results are preliminary, for discussion. If, as the findings are scrutinized and the comparison ratings are discussed, a consensus emerges regarding a preferred future urban structure for the GTA and/or a process for moving purposefully in that direction, the study will have served its purpose.

The opinions offered herein are those of the consultant and reflect to the extent possible comments received from the Urban Structure Subcommittee established for this study. They do not necessarily reflect the views of the Greater Toronto Coordinating Committee or the governments represented on the Committee.

We trust that the information and opinions offered will be helpful in the context of the study and subsequent planning activities and decisions.

Yours sincerely,

IBI GROUP

Neal A. Irwin
Managing Director

Laurence C. Sherman
Director

NAI:mr

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Greater Toronto Area Urban Structure Concepts Study: Background Report No. 6: Executive Summary

PURPOSE AND SCOPE

The purpose of this background report is to compare the human service implications for the three urban structure concepts in terms of capital cost, operating cost efficiencies and quality of life/service level factors. Human services are defined herein as:

- primary, secondary and specialized hospital-based health care services;
- non-institutional community-based health services;
- primary and secondary schools;
- community colleges;
- universities;
- social services: elderly, disabled, child care, youth;
- protection: police, fire, ambulance.

POLICY DIRECTION

While the responsibility for delivering human services is shared between the province, the regions, the local municipalities, volunteer agencies and the private sector, overall policy direction is generally set by the province. Yet even provincial policy setting is a shared mandate within the government and includes ministries of Community and Social Services, Health, Education, Colleges and Universities, Housing, Culture and Communications, Skills Development, The Office for Senior Citizens' Affairs, The Women's Directorate and others. Current policy directives are coming from the Premier's Council on Health Strategy, Long Term Care Reform, and the Provincial Municipal Social Service Review. Implementation strategies are being developed throughout government including a joint effort by COMSOC, Health and Education. The new policy directions appear to emphasize:

- rationalization and deconcentration of highly specialized services, such as tertiary hospitals;
- community-based service delivery;

- improved collaboration among service sectors and across jurisdictions.

KEY ISSUES

The delivery of human services is currently not programmed and funded on the basis of standards, nor demographic change over time, but on the basis of incremental government policy. Recognizing the lack of adequate standards upon which to forecast future programming or funding for human services, a focus group of practitioners and senior officials was invited to identify key issues affecting future human service delivery in each of the three concepts. Emphasis was placed on:

- the importance of local community will to politically influence the funding and administration of human services;
- ensuring an adequate supply of social housing;
- reducing the many possible obstacles to accessing human services;
- encouraging continuity and integration of services at the local level, and early intervention and prevention measures to reduce need for costly services;
- promoting community-based flexibility in program delivery, funding and capital facilities development.

COMPARISON OF THE CONCEPTS

Criteria for comparing the concepts in terms of effectiveness and efficiency of these services takes into account the key issues identified by the focus group. The results of the comparison are summarized in Exhibit 7, Comparison Measures Table. Based on these results, the comparative strengths and weaknesses of the concepts are assessed as follows:

- Concept 2 (Central) would achieve the highest utilization of existing health, education and cultural facilities and (although capital cost estimates are similar) would have the potential of reducing required future expenditures for new facilities;

- Concept 2 (Central) would result in more efficient delivery of all human services in terms of travel distances for both providers and clients;

- Concept 1 (Spread) and Concept 3 (Nodal) would provide cultural and recreation services at less capital cost due to higher land costs in Concept 2 (Central);

- Concept 3 (Nodal) would have the highest potential for effective and efficient delivery of community-based social, health and protection services.

Greater Toronto Area Urban Structure Concepts Study: Background Report No. 6: Human Services

1. INTRODUCTION

1.1 PURPOSE AND SCOPE

The purpose of this Background Report is to describe the analysis of human service implications carried out as part of Task 3.4 - Human Services in the GTA Urban Structure Concepts Study, carried out during the period February - June 1990, on behalf of the Greater Toronto Coordinating Committee.

The general objective of the Urban Structure Concepts Study is to develop three generic urban structure concepts for the Greater Toronto Area (GTA) and to provide a broad, strategic comparison of the three concepts with particular emphasis on their infrastructure requirements (e.g. transportation, hard services, human services, open space) and the capital cost of such facilities, as well as impacts on the immediate hinterland of the GTA. It is important to emphasize that this is not a planning study, in that none of the three concepts are being put forward as a recommended plan. Rather, each of the concepts is a case study, postulated in order to examine the infrastructure and related functional and quality aspects of three quite different urban structure possibilities for the GTA.

The terms of reference for the Urban Structure Concepts Study include a statement that:

> "2.3.4. The human, social, health, education and recreational needs of each option would be addressed to assess both the quantifiable needs and impact as well as the non-quantifiable."

Accordingly, Task 3.4 addresses the implications of the three concepts in terms of their impact on health, education, culture and recreation, social services and protection facilities and services in the GTA. As required, analysis of capital costs to serve a 2021 population in the order of 6 million people is provided as well as a qualitative assessment of the relative effectiveness and efficiency of human services for each of the three urban structure concepts.

The analysis of human service implications has been carried out by IBI Group in association with Barry Lewis (ARA Consultants), Maureen Quigley (Maureen Quigley & Associates) and Deborah Latter (D. W. Latter and Associates).

1.2 OVERVIEW OF URBAN STRUCTURE CONCEPTS

In accordance with the terms of reference, the three urban structure concepts were developed following the prescribed guidelines:

1. A status quo concept, representing a continuation of existing trends, characterized by substantial population growth in the suburban regions at relatively low density, with continuing concentration of office development downtown and in various sub-centres in Metro and the four adjacent regions (referred to as **Concept 1, Spread**);

2. A concept in which substantial additional population growth/intensification occurs within Metro Toronto, and other "mature" urbanized areas adjacent to Metro along with further intensification of employment activities such that the rate of urbanization occurring beyond Metro boundaries would be significantly reduced (referred to as **Concept 2, Central**); and

3. An intermediate concept in which residential and employment growth occurs primarily in and around various existing communities in a compact form, resulting in reduced consumption of undeveloped land relative to Concept 1 (referred to as **Concept 3, Nodal**).

Exhibit 1 shows the actual distribution of population and employment by region in the base year (1986) and the postulated distribution for each of the future years (2011 and 2021) for Concepts 1, 2 and 3. Also shown in each instance are the ratio of total employment to residential population in each region, referred to in this presentation as the activity rate, and estimates of the urbanized area and gross urban density for each concept.

The source of the base year numbers is the 1986 census and the reports prepared by Clayton Research Associates Limited and Hemson Consulting Ltd. for the Greater Toronto Coordinating Committee (GTCC) in October 1989. The source for the Concept 1, Spread, figures is the Clayton and Hemson reports taking the "base case" projections prepared for the GTCC. For the purposes of analyzing the Central and Nodal concepts in terms of human services, it was necessary to refine the population forecasts by age categories. The percentage distribution for each age group in the years 2011 and 2021 was calculated for Concept 1. The proportionate distribution was then applied to Concepts 2 and 3 in 2011 and 2021, respectively.

1.3 APPROACH AND METHODOLOGY

For purposes of this study, the following public human services and facilities have been included:

- primary, secondary and specialized hospital-based health care services;
- non-institutional community-based health services;
- primary and secondary schools;
- community colleges;
- universities;
- social services: elderly, disabled, child care, youth;
- protection: police, fire ambulance.

Our initial approach was to compare the three urban structure concepts for each of the above human service sectors. General criteria to be used were capital cost, operating cost and level of service/quality of life. Capital cost was to be quantified, whereas the other criteria were to be applied qualitatively. We encounter two basic obstacles:

i) without consistent standards for human services and a method of systematically quantifying demand by population for the various services, future capital costs cannot be reliably forecasted. Standards are available and were used in forecasting future capital costs for hospitals, schools, colleges and universities; however, an alternative method of estimating possible future costs based on current per capita expenditures and assuming current standards had to be devised for social services, culture and recreation and protection services.

ii) in theory this analysis should elect to either hold levels of service constant and calculate per capita capital cost variances for each concept, **or** hold per capita capital expenditures constant and compare the resulting levels of service for each concept. Because the available cost and level of service information varies with each unique human service analyzed, it has been necessary in some cases to identify both cost and level of service implications.

The initial results indicated that the services within each sector appear to separate into three basic scales of delivery, and that this separation is common to all of the sectors. Therefore, the final comparison herein is formulated in terms of three basic scales of service delivery:

- regional services (i.e. GTA wide), e.g. universities, major cultural facilities or tertiary hospitals which provide a range of specialized services;
- local community services, e.g. colleges, high schools, community hospitals, arenas;
- neighbourhood services, e.g. primary schools and playgrounds, child care, local libraries and parks.

The analysis utilized available existing data (i.e. no new field data has been generated) as reported from local, regional and provincial agency sources. This data, where available, included:

- utilization or participation factors;
- service populations;
- space inventories;
- space standards;
- space surplus/deficits;
- current unit capital costs;
- future projections or estimates of the above factors.

In cases where standards are under review (e.g. health) we met with officials to agree on assumptions for revising standards for purposes of this forecasting. In cases where standards do not exist or are inconsistent, we list assumptions under which we estimated costs and refer to policy implications. In cases where future policies might change the estimates, they are noted.

The capital costs for hospitals and education facilities (primary and secondary schools, colleges and universities) are based on current provincial standards, adjusted where ministry officials so advised. The capital cost estimates for human services in the areas of protection,

social and other health services and culture and recreational services are based on the GTA capital expenditure needs analysis for the years 1989 to 1993, adjusted to current dollar value.

An estimation of the future capital costs which takes into account the differences between the regions would require an examination of all services at a level of detail beyond the scope of this study. We therefore prepared per capita estimates based on parameters which are the same for all regions. This assumes that the economies of scale in areas of higher density would be counter balanced by higher land costs for equivalent facilities.

It was assumed that capital cost expenditures are dependent on both the existing population and the increase in population. Using this assumption, the factors for these two variables were determined by regression analysis. The relationships obtained in this manner account for 74% the observed variations.

2. CURRENT POLICY ISSUES AFFECTING FUNDING AND DELIVERY OF HUMAN SERVICES

Currently, capital expenditures for the provision of human services within the GTA comprise some 35.7% of total provincial and local government capital expenditure. Annual operating costs for human services tend to be substantially higher than capital costs, particularly in certain human service sectors such as social services, where capital facilities costs are relatively minor compared with personnel and other operating costs.

2.1 POLICY DIRECTION

The human services sphere is a collection of loosely connected mandatory and voluntary programs funded by several levels of government under a variety of program lines and ministries and by the private voluntary sectors. Capital and operating costs are not arrived at on a basis which is standardized across programs or even within a single program. The differences in programs and funding arrangements vary **within** the social service and health sectors, at least as much as they do **between** social services and health.

Moreover, several provincial ministries are involved in health and social services: the Ministry of Community and Social Services, Ministry of Health, Ministry of Housing, Ministry of Skills Development, Ministry of Colleges and Universities, the Office for Senior Citizens' Affairs, the Women's Directorate, and others.

For their part, Regional Municipalities exercise discretion with respect to certain programs (for example, whether to provide a municipally operated Home for the Aged) and Regions have varying degrees of investment in providing discretionary programs. They may, in fact, choose to deliver some programs beyond the level of commitment which is cost shared with the provincial government as well. Municipal and Regional preferences and capacity are significant determinants of the level and kinds of programs provided.

In 1986, The Ministry of Health announced the Province wide capital allocation of $1.2 billion towards the implementation of approximately 4,000 new acute and chronic hospital beds and the related enhancement of services. This initiative was directly related both to rapid growth in such areas of the Province as Greater Toronto and to the needs of an increasingly elderly population. Within the GTA, the addition of nearly 2,000 acute and chronic care beds, as well as the replacement of the Ontario Cancer Institute (Princess Margaret Hospital), was proposed. Project values could be in the order of $539 million with the Provincial Government providing up to two-thirds of the costs. Bed numbers were determined based on

traditional Ministry bed guidelines with input from District Health Council studies and reviews.

A series of studies have been undertaken in Ontario, each of which has made recommendations regarding the rationalization and coordination of health services and the strengthening of community services. These studies have culminated in three reports received by the Ontario Government in 1987: Towards a Shared Direction for Health in Ontario (Evans Report), Health for All Ontario (Spasoff Report) and Health Promotion Matters in Ontario (Podborski Report). The report of the Ontario Health Review Panel (Evans Report), stated that:

> "Government must respond to pressures for expansion of the health budget to accommodate higher utilization, new technology and more hospital in-patient facilities, particularly for long term care. . . . we conclude efforts to slow down the growth in health budgets will be frustrated unless new incentives and organizational arrangements are found to make use of existing resources . . ."

Health Reform is aimed at the development of a comprehensive plan for health services aimed at strengthening community-based services, reducing dependence on in-patient beds and managing growth. Hospital beds will not be added in isolation from community-based services.

The Premier's Council on Health Strategy was established in December 1987, in direct response to the findings of the three major reports. The Council's mandate is to examine policy options for the future direction of health and health care, to establish priorities and to build consensus for change in conjunction with health care providers and community representatives. To date, the report From Vision To Action has identified four elements of a strategic plan for the health care system. Of particular importance has been the further reinforcement of the need for a "shift in emphasis and related resources to the development of community services as an equal partner with the institutional . . ." In light of the foregoing, traditional bases for establishing ratios and estimating costs could not usefully serve to predict the implications or project future allocations under the three scenarios.

In future, policy initiatives of government will re-shape the Human Services sector in ways which require new approaches to planning, management delivery, and funding. Approaches to providing human

services are under major provincial government policy review. The objectives are to qualitatively improve the range and level of essential services, while limiting the growth in costs as demand continues to increase. Various strategies are in evidence including de-concentration, and de-institutionalization of services, emphasis on community-based delivery, rationalization of services and facilities, and improved collaboration among service sectors and among levels of government to provide services on a more integrated basis. Among these are the following initiatives:

1) The **Premier's Council on Health Strategy** has reinforced these thrusts as well as articulating health goals for Ontario which are predicated upon a broad definition of health. Integrated, coordinated local delivery of a comprehensive range of services which promote and enhance well-being for individuals and families is the predominant thrust. This calls for an assessment of all new institutional bed commitments, including those made in 1986, with a view to supporting only those where a clear need is established but with funds also re-directed to alternatives to beds. This will be done within the context of a priority framework for capital funds.

2) A key example of inter-ministerial efforts in Health and Social Services is the **Long-Term Care Reform** initiative. Recognizing the need for a joint initiative of the two large ministries, a new division reporting to both ministries through an Assistant Deputy Minister has been created to develop a better integrated, community-based system of services for the elderly and the disabled. The size of the elderly population, the escalating cost of long-term care facilities, increasing public demand for community and home-based services and various funding anomalies lend urgency to the need to discover new ways of funding and delivering services. Implementation planning at the local community level is scheduled to begin in the fall of 1990. Consistent with this initiative, the Ministry of Health Capital Strategy encourages the development of alternatives to hospital beds and directs that consideration of hospital beds will only be in conjunction with other components of a comprehensive delivery system.

3) The **Provincial Municipal Social Service Review** began in May 1987 with the establishment of a tri-partite committee of the Ministry of Community and Social Services, Association of Municipalities of Ontario and Ontario Municipal Social Services Association. After extensive consultation, the committee's report

was recently released proposing realignment and clarification of the responsibilities of the two levels of government, for policy and legislation, funding, service management and delivery of social services. The report emphasizes (among other principles) the importance of:

- community participation;
- local flexibility;
- improved coordination at the local level;
- consultative relationships in the system; and
- fiscal realism.

Changes arising from the Provincial-Municipal Social Service Review may lead to greater clarity so that it will be possible in future to more easily identify which programs will be provided, more readily establish norms, and manage more effectively the costs of development and delivery of programs consistent with needs of local communities.

Other examples of the efforts of governments and providers to cross historical boundaries in order to address inadequacies and reinforce strengths are present or emerging. For example, Children's Services (educational, health, child welfare, mental health and others) are becoming the focus of increased efforts at local integration and coordination.

4) The concept of **integrated, community-based "hubs"** of neighbourhood services and facilities is under active review jointly by the Ministry of Community and Social Services, the Ministry of Education and the Ministry of Health. The concept is aimed at achieving coordinated, efficient development of community facilities such as elementary and secondary schools, public libraries, playgrounds, health clinics, family counselling, local pools and arenas, etc. The purpose is to facilitate more collaborative approaches to the delivery of human services at locations where people live and work, to enhance service levels by providing increased continuity of service, care, teaching, etc.

2.2 KEY ISSUES

Integration and coordination at the local community level and local participation in system management are recognized as features of a more responsive, more accessible and potentially less expensive delivery system.

Central to these discussions is the definition of "local community". Geo-political boundaries present a difficulty, because service-provider boundaries and those of government ministries do not correspond. Nor are District Health Council boundaries and those of the Area Offices of the Ministry of Community and Social Services, coterminous. Consequently, recent thinking has turned in the direction of a concept of local community, in which "community" is defined as the geographic area within which individuals and families can reasonably expect that the majority of their primary health and social service requirements will be met.

This definition of community has several implications for community programming. As the boundaries of "local community" are established, the placement and types of hospitals, schools, long-term and acute care facilities and social services will inform those decisions in the first instance, and will be informed by them, subsequently. In consultation with a focus group of selected practitioners and officials in various human service sectors, the following key issues were identified as affecting the future provision of human services as potentially influenced by the three urban structure concepts:

1. The allocation of most human service funding by governments is not based on planning for long term growth, but rather on near term political priorities and policies. Therefore human service funding is in large part a function of the **community political will** to make needs known and deal with them. Consequently it is most realistic to forecast current deficiencies and future services on the basis of public policy and the potential for demand generated political will rather than on the basis of norms or standards. (This is not to understate the importance of planning for human service expenditures on the basis of demographic change and local need although such methods do not now determine funding.)

2. The supply of **housing** available to lower income people affects the demand for human services. For example, the extent of social housing available to the elderly, the unemployed, those returning from institutionalization, etc., influences the nature of community-based health and social services required.

3. The **need** for human services pervades all income, employment and housing levels. However, those of higher income are more able to afford to access services privately. Those of middle and lower income are not. It is **access** to service which changes with income. The need for service does not recognize income differences. All income levels have child abusers, people with mental health problems, learning problems, developmental handicaps, etc.

4. **Accessibility** to human services is both an issue for providers and clients. As density increases, the efficiency of delivering human services will increase (i.e., the cost per capita will decrease) due to shorter travel distances, and in this sense accessibility increases with density. However, accessibility to human services by the public is subject to a number of obstacles which may (to varying degrees) be affected by the three urban structure concepts. Client affordability for example, is affected by travel distances and the ability to travel by public transit versus having to own/operate ones' own auto. However, affordability is only one form of accessibility. Language and cultural sensitivity, physical accessibility, waiting lists, numbers and kinds of services available, and transportation are but a few others. Accessibility to services may also be limited by the ability of the agency to offer multi-lingual services and to be open at times of day/week most convenient to the working public. Accessibility is also enhanced where multiple services can be located in close proximity to one another so as to most efficiently utilize the client's time and travel expenditure. Such variation in level of service implies that cost efficient operations are made more possible by larger service populations which become more likely as density increases.

5. It is most cost effective to provide human services in both the residential and the workplace environments, particularly where the distance for the client is minimal and therefore better **continuity of service** between residence and workplace is afforded. Such continuity also provides for a higher level of **prevention** as well as early intervention, which ultimately reduces the need for human service expenditures.

6. Future trends will be towards making human services and facilities more flexible, responsive to diverse and changing community needs, **self correcting**. In this regard, the concepts should be evaluated in terms of their capability to:

- support provincial policies of **"de-concentration"** (for example, of highly specialized hospital-based services);

- enhance **community-based** service delivery/management;

- allocate and spend funds in smaller, more **continuous steps** (e.g. incremental additions or adaptations) rather than larger scale projects that require years to plan and implement, which incur related periods of service deficit while awaiting the next major increment;

- encourage **collaboration** among human service sectors and across jurisdictions including the legal aspects of funding arrangements to allow such collaboration.

7. Growth of the GTA over the next 30 years will be characterized by certain factors requiring human service response:

   i) a higher proportion of the GTA population will be older, causing a shift in emphasis in human service programming and facilities (e.g. to community health, culture and leisure, recreation involving less demanding sport, senior citizen support services designed to allow them to remain in their own homes rather than moving into institutions);

   ii) consequently, in order to maintain high economic productivity, increased emphasis will need to be placed on culturally sensitive education and health services for the young because (a) a lower proportion of the GTA population will be entering the work force, and (b) a higher proportion of population growth may be from in-migration from relatively poor Canadian regions and other countries;

   iii) in-migrants, particularly the increasing proportion of these which will come from other countries (see Background Report No. 2), will require specialized human services including English as a second language (ESL) programs, family counselling and senior citizen drop-in centres;

   iv) a continuing high incidence of single parent families will mean increased demands for subsidized housing, day care, community centres and parent enrichment centres.

While demand for human services to meet these conditions will increase, delivery of such services is expected to become **more cost/efficient** if collaboration between agencies and between jurisdictions improves, and if government moves to **rationalize and integrate community-based services and facilities.** For example, currently, local schools, libraries, parks and recreation, community health, job training, official languages schooling and cultural programs are all typically operated by different agencies in separate single purpose facilities which tend to become obsolete as demographic demands change over time. Current planning indicates that more efficient service delivery, increased client convenience and greater adaptability to changing demographic and neighbourhood conditions will be possible through future community hub-centres (e.g. based in school buildings) providing a wide range of human services on an integrated basis. Another approach is to centralize services with mobile units to provide cost efficiency to the service provider and client - the former because of few administrative and capital costs, the latter because of immediate access to service (prevention, early intervention) - thus saving travel time and increasing the potential for personalized attention.

8. Distinctions were made, where possible, in the comparison of the concepts between cost/efficiencies of the service **provider** (e.g. agency, program) and the cost/benefit to the **client/user**. For example, it may be most cost/effective for government to provide centralized services with mobile units to outlying communities, yet it may be less beneficial to the client in terms of travel time, hassle and level of personal attention.

3. CRITERIA AND ASSUMPTIONS FOR COMPARISON OF THE CONCEPTS

Taking into account the key issues discussed above, the following criteria have been applied to comparing the three urban structure concepts in terms of human services:

A. Quality of Life/Levels of Service

- user/client cost/benefit
- de-concentration of specialized services
- community-based, integrated delivery
- community-based political will
- choice/accessibility

B. Operating Costs (of service provider)

C. Capital Costs

Exhibit 5 indicates the assumptions which underlie our application of the criteria to a comparison of the three urban structure concepts.

4. COMPARISON OF THE URBAN STRUCTURE CONCEPTS

Exhibit 6 indicates our qualitative comparison of the concepts as they affect the delivery of human services and the development of facilities to accommodate them in terms of the three criteria discussed above: Quality of Life/Level of Service, Operating Cost and Capital Cost. Based on the comparisons in Exhibit 6, a more generalized summary comparison table has been formulated in Exhibit 7 for inclusion in Background Report No. 7: Comparison of Urban Structure Concepts, which compares the concepts in terms of Transportation Systems, Water, Sewer and Solid Waste Disposal Systems, Greening/Environment, Human Services, and other criteria.

EXHIBIT 1

File Overview.wk1 07-Jun-90 10:57 AM

GTA Urban Structure Concepts: Overview of Population and Employment Distributions by Region

	DURHAM		HALTON		METRO		PEEL		YORK		GTA TOTAL	
BASE YEAR (1986)												
Resident Population, P (000's)	326		271		2193		592		351		3733	
Total Employment, E (000's)	137		119		1349		304		170		2079	
Activity Rate (E/P)	0.420		0.439		0.615		0.514		0.484		0.557	
Urbanized Area (000's of acres)	49.2		45.4		152.9		74.1		54.8		376.4	
Gross Density ([P+E]/Urbanized Area)	9.4		8.6		23.2		12.1		9.5		15.4	
	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021	2011	2021
CONCEPT 1: Spread												
Resident Population, P (000's)	673	794	497	593	2358	2428	1060	1198	851	1007	5438	6020
Total Employment, E (000's)	280	309	244	271	1686	1724	593	631	456	505	3259	3440
Activity Rate (E/P)	0.416	0.389	0.491	0.457	0.715	0.710	0.559	0.527	0.536	0.501	0.599	0.571
Urbanized Area (000's of acres)	87.3	99.3	74.3	84.7	152.9	152.9	119.0	129.3	116.5	133.5	550.0	599.7
Gross Density ([P+E]/Urbanized Area)	10.9	11.1	10.0	10.2	26.4	27.2	13.9	14.1	11.2	11.3	15.8	15.8
CONCEPT 2: Central												
Resident Population, P (000's)	455	475	362	378	3310	3800	794	828	517	540	5438	6020
Total Employment, E (000's)	253	263	203	211	2046	2183	465	479	293	304	3259	3440
Activity Rate (E/P)	0.557	0.554	0.560	0.560	0.618	0.574	0.585	0.578	0.566	0.564	0.599	0.571
Urbanized Area (000's of acres)	68.4	70.8	59.6	61.7	152.9	152.9	95.5	98.3	77.4	80.1	453.8	463.8
Gross Density ([P+E]/Urbanized Area)	10.4	10.4	9.5	9.5	35.0	39.1	13.2	13.3	10.5	10.5	19.2	20.4
CONCEPT 3: Nodal												
Resident Population, P (000's)	595	681	464	545	2626	2800	1050	1190	703	804	5438	6020
Total Employment, E (000's)	288	312	240	266	1748	1794	600	651	383	417	3259	3440
Activity Rate (E/P)	0.484	0.458	0.517	0.488	0.666	0.641	0.571	0.547	0.545	0.519	0.599	0.571
Urbanized Area (000's of acres)	77.4	84.7	63.5	69.4	152.9	152.9	109.9	118.4	88.0	96.4	491.7	521.8
Gross Density ([P+E]/Urbanized Area)	11.4	11.7	11.1	11.7	28.6	30.0	15.0	15.5	12.3	12.7	17.7	18.1

Note: Concept 1 is the GTCC "Base Case" Projection.

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GROUP

EXHIBIT 5

ASSUMPTIONS TO DESCRIBE THE CONCEPTS IN TERMS OF HUMAN SERVICES

	1. SPREAD	2. CENTRAL	3. NODAL
GENERAL	• services other than those which are highly specialized will be provided locally on a constant per capita basis in all concepts, using current participation rates (recognizing that current participation rates may not match need or future policy) • principal policies are moving to increase community-based integrated service delivery and deconcentration • capital cost variations among the three concepts will be determined by the amount of space (size of facility) to meet the needs of the service area population. Space per capita and unit construction costs will remain constant for all concepts. Land for human service facilities will be acquired at market value.		
	• community pressure for services will be slow to grow until new communities become more mature	• community pressure for services will be strong from established network of organizations as it expands	• community pressure for services will strengthen as nodes mature; in time, there is potential for both collaboration and tension between nodes
	• accessibility to services would be more auto-dependent	• services would be highly accessible by public transit	• nodes of services would be accessible by public transit
	• regional services would remain concentrated downtown; some deconcentration would occur; mobile services would be provided from centralized core facilities • more widely dispersed services	• deconcentration of regional (tertiary) services would not occur; existing services and facilities would be expanded and further rationalized/integrated • services become more integrated, less differentiated	• some nodes would be large enough to attract "deconcentrated" regional services
HEALTH	• some deconcentration of highly specialized services into the suburban regions would decrease referrals into Metro	• intensification of tertiary services in Metro will increase referrals from the suburban regions	• deconcentration should reduce tertiary service referral patterns into downtown Metro, i.e. more tertiary services will be located in the nodes
	• insufficient density to sustain full range of non-institutional health services	• density will sustain widest range of community non-institutional health services	• density concentration will permit some community non-institutional health services
EDUCATION	• opportunity for developing new campuses and/or expanding existing institutions	• limited land area higher land costs for developing new institutions • existing campuses are expandable	• expansion of some existing universities and colleges rather than building new ones
SOCIAL SERVICES	• costs will limit the level of service and access to decentralized services provided	• need for more services/capita • wide range of specialized services	• compact/nodal communities are very compatible with integrated hub centres providing a range of human services with more convenient access owing to higher population and employment densities than in the spread concept.
	• specialized referrals to Metro	• specialized referrals to Metro	• nodal points of service delivery would reduce need to travel downtown, but the range of services could be somewhat limited, particularly in smaller nodes.

EXHIBIT 5

ASSUMPTIONS TO DESCRIBE THE CONCEPTS IN TERMS OF HUMAN SERVICES (Cont'd)

	1. SPREAD	2. CENTRAL	3. NODAL
CULTURE & REC	• more adequate local recreation but less specialized facilities	• enhanced cultural services and facilities	• some opportunity for specialized facilities
	• land more readily available for new and improved open space	• open space more limited in central, built-up area; intense use	• clusters of specialized facilities, but limited in specialization
		• potential for developing more passive open space outside Metro (i.e. less development pressure in the suburban regions)	• better opportunity for connected green separators between communities
PROTEC-TION	• low density and distance could increase response time and decrease demand	• density will increase demand for some protection services; possible congestion would affect response time but concentrated urban structure would reduce response travel distances	• clusters of service facilities centered in nodes; facilitates rapid response time

EXHIBIT 6

DETAILED COMPARISON OF CONCEPTS
A. QUALITY OF LIFE/LEVEL OF SERVICE

	1. SPREAD	2. CENTRAL	3. NODAL
GENERAL	• possibly more opportunity for free-market affordable housing and new industry utilizing less expensive suburban land, but diversity of housing and job types in a given suburban community may be more limited	• opportunity for diversified affordable housing and industrial employment depending on availability of affordable land • per capita need for some protection services increases with density, as does the efficiency of providing them	• greatest opportunity for free-market diversity of affordable housing and localized industrial jobs due to diversity of demographics, densities, land uses and land values
	• less community organization and local political would mean less pressure for human service funding per capita and thus less community-based services provided	• stronger pressure for human services from established urban communities means higher per capita service funding and community-based services provided	• potential for community-based political will to press for service funding; creates "tension" between nodes, heightened overall demand for funding and collaboration (also competition)
	• services in new growth areas tend to be less flexible, less adept at "self-correction" in response to changing demands	• older, established agencies can be inflexible, less adept at "self-correction"	• more potential in developing nodes to encourage program flexibility and to be "self-correcting"
	• facilities would tend to be developed in new, larger units; less flexibility in response to continuous changes in demand (not as many people to create the demand for continuous change, rather delay until demand exists for new, larger facility)	• more opportunity to adapt and add incrementally to existing services and facilities	• additional growth centres would create opportunity for smaller, more continuous steps in adding and adapting services and facilities
	• auto dependency makes services less accessible by the poor, elderly, youth, etc. (i.e. those who do not own/operate a private car) and thus utilization of services is reduced	• utilization of services is enhanced by efficient transit accessibility to more service locations	• utilization of services is enhanced by efficient transit accessibility to and among the nodes
	• potential increased distances between home and workplace means less opportunity for continuity of service at both locations	• potential decreased distances between home and workplace means increased opportunity of continuity of service at both locations	• significant opportunity for nodal residents to work within the same node, thus opportunity for continuity of services within nodes
	• minimal deconcentration would likely occur; tertiary facilities would remain concentrated downtown; mobile services to lower density areas would be less efficient; more people would travel farther for tertiary services	• mobile unit deconcentration of tertiary services would be most efficient; growth in tertiary services would occur as expansions of existing or new services within the Metro core; least travel distances to tertiary services	• mobile unit deconcentration of tertiary services could benefit from economics of scale at nodes; opportunity for some nodes to be large enough to justify deconcentration of tertiary facilities; travel distances somewhat reduced
	• less need for collaboration among agencies and regions in lower density areas	• collaboration between agencies and regions might be impeded by the power imbalance concentrated within Metro, but within Metro agencies might be encouraged to collaborate to achieve more integrtaed, efficient operations	• nodes would be large enough (and exposed enough) to encourage collaboration between them, and between levels of government
	• more dispersed, less specialized services; less client choice	• maximum opportunity to provide diversified, specialized services and client choice	• some diversification and specialization; choice within a node is limited but choice is expanded by efficient transit links to other nodes (assuming good collaboration between jurisdictions so that people have inter-nodal access to services)

EXHIBIT 6

DETAILED COMPARISON OF CONCEPTS
B. OPERATING COSTS (SERVICE PROVIDERS)

	1. SPREAD	2. CENTRAL	3. NODAL
GENERAL	• lack of proximity to facilities decreases utilization of services; problems tend to worsen before the client makes contact with the system; cost of services/client thus tends to increase	• prevention programs tend to be more effective, thus reducing cost/client	• potential for effective prevention programs could reduce cost per client
	• auto-dependency in suburbs makes accessibility costs to clients higher	• transit reduces accessibility costs to client	• efficient local and inter-nodal transit enhances accessibility costs to client.
REGIONAL SCALE FACILITIES SERVICES	• high transportation costs • expansion of existing hospitals, universities and colleges is efficient in suburban locations • maximum referrals to specialized care in the downtown	• transportation efficiencies • increased potential for efficient specialization and operational rationalization	• deconcentration can be achieved more efficiently
LOCAL COMMUNITY FACILITIES/ SERVICES	• low density + low utilization + more costly accessibility = inefficient duplication of services	• efficient referrals • economies of scale provide potential for specialization • high utilization	• sufficient scale to achieve high utilization and service rationalization with some specialization • potential for "one stop" integrated delivery services
NEIGHBOUR-HOOD FACILITIES/ SERVICES	• less efficient utilization • least efficient neighbourhood-based (eg. home) services	• high utilization • maximum potential for specialization • neighbourhood-based (eg. home) services most efficient	• good utilization and specialization potential • efficiency levels for neighbourhood-based services

EXHIBIT 6

DETAILED COMPARISON OF CONCEPTS
C. CAPITAL COSTS

		1. SPREAD	2. CENTRAL	3. NODAL
GENERAL		• new facilities tend to be built for designated purposes and as demographic requirements change over time such facilities become obsolete; eg. as communities age their primary schools become obsolete and others are required in new communities elsewhere	• in mix-use areas there is increased opportunity for flexibility in acquiring and disposing of facilities over time and adapting them to other uses as requirements change	• good potential for adapting and reusing facilities as demographic requirements change • good potential for effective intervention/prevention, which could reduce overall demand for facilities
REGIONAL SCALE FACILITIES		• potential to expand existing suburban universities, colleges and hospitals as well as to initiate new institutions	• potential to expand/adapt tertiary hospitals where land is available • more potential for continuous adaptation and expansion to pace growth • potential for rationalizing specialized facilities, increasing utilization, reducing capital cost • highest land costs	• efficient clustering of facilities but increased new construction as efficient neighbourhood support centres, which could reduce overall demand for facilities
LOCAL COMMUNITY FACILITIES		• more facilities needed due to lower accessibility = duplication of services/ facilities	• potential for rationalizing specialized facilities • potential for integrated, multiple use	• potential for sharing multi-use and specialized facilities as efficient neighbourhood support centres, which could reduce overall demand for facilities
NEIGHBOUR-HOOD FACILITIES		• lower densities = lower utilization, duplication, greater capital cost/capita	• high density = increased demand, increased utilization, potential for shared use/multi-use facilities; cost savings	• intermediate level of capital cost but closer to that of Central than of Spread concept because of compact/nodal structure.
EDUCATION/ HOSPITALS	@ 3.5 beds/1000	4,265	4,560	4,350
	@ 3.0 beds/1000	3,512	3,807	3,597
	Elementary & High Schools	2,628	103	1,801
	Universities	1,209	1,209	1,209
	Colleges	485	665	573

Note: Capital cost estimates are derived in Appendices A, B, C and D.

EXHIBIT 7
GTA URBAN STRUCTURE CONCEPTS STUDY
COMPARISON MEASURES TABLE
HUMAN SERVICES

CRITERIA & FACTORS	COMPARISON MEASURES	CONCEPT 1: SPREAD	CONCEPT 2: CENTRAL	CONCEPT 3: NODAL
6.1 Level of service, accessibility, efficiency and capital costs of human services	**Effectiveness/efficiency of health services**	**Medium:** Least efficient utilization of existing hospitals and most duplication of services and facilities; least efficient delivery of community-based non-institutional services; greatest travel distance to obtain specialized services, but lowest capital costs for hospitals. Capital Cost Estimates ($ Billions) @ 3.5 beds/1,000: $4.45 @ 3.0 beds/1,000: $3.69	**Medium-High:** Highest utilization of existing hospitals and highest level of service to aging population and referrals to specialized services; greatest opportunity for rationalization of services and facilities; most efficient delivery of community-based primary/non-institutional services; most efficient travel distance to obtain specialized services. Capital Cost Estimates ($ Billions) @ 3.5 beds/1,000: $5.56 @ 3.0 beds/1,000: $4.65	**Medium:** Potential for rationalization within areas served by nodes; efficient delivery of community-based non-institutional services; potential for deconcentration of a wider range of specialized services to nodes. Capital Cost Estimates ($ Billions) @ 3.5 beds/1,000: $4.75 @ 3.0 beds/1,000: $3.93
	Effectiveness/efficiency of education services	**Medium-Low:** Greater travel distances; less efficient utilization of primary facilities; greater potential for inefficiencies from duplication; less efficient specialization; highest demand for new construction, highest capital cost. Capital Cost Estimates ($ Billions) Elem. & High Schools: $4.71 Colleges & Universities: $1.69 Total: $6.40	**Medium-High:** Most efficient travel patterns; most opportunity for rationalization and efficient specialization; best re-utilization of existing primary classroom capacity, therefore least capital cost; highest utilization of existing (expanded) colleges and universities. Capital Cost Estimates ($ Billions) Elem. & High Schools: $2.33 Colleges & Universities: $1.87 Total: $4.20	**Medium:** Intermediate travel distances; potential for efficient use of integrated primary and secondary facilities. Capital Cost Estimates ($ Billions) Elem. & High Schools: $3.01 Colleges & Universities: $1.78 Total: $4.79

EXHIBIT 7 (CONT'D)
GTA URBAN STRUCTURE CONCEPTS STUDY
COMPARISON MEASURES TABLE
HUMAN SERVICES

CRITERIA & FACTORS	COMPARISON MEASURES	CONCEPT 1: SPREAD	CONCEPT 2: CENTRAL	CONCEPT 3: NODAL
6.1 Level of service, accessibility, efficiency and capital costs of human services (CONT'D)	**Effectiveness/efficiency of cultural and recreational services**	**Medium-High:** Highest space standards; least potential for economies of scale and efficiencies from shared, integrated services and facilities; least accessibility; but lower land costs. Capital Cost Estimates ($Billions) General Cult./Rec. $10.90 Parks (Land) 2.32 Total $13.22	**Medium:** Lowest space standards; maximum use of existing facilities; high utilization of facilities, and potential for efficient integration; highest accessibility; but higher land costs. Capital Cost Estimates ($Billions) General Cult./Rec. $10.90 Parks (Land) 4.22 Total $15.12	**Medium-High:** Moderate space standards and good potential utilization; opportunity for rationalization of services and facilities development; moderate land costs; good regional accessibility. Capital Cost Estimates ($Billions) General Cult./Rec. $10.90 Parks (Land) 2.82 Total $13.72
	Effectiveness/efficiency of social and other health services	**Medium-Low:** Least efficient accessibility; least efficient community-based service delivery; least specialization; lowest overall level of service. Capital Cost Estimates ($Billions) Soc/Other Health Services $2.68	**Medium:** Effective use of existing service agency network as delivery base; highest accessibility; highest potential for efficient specialization but less potential for integration and collaboration effecting overall level of service. Capital Cost Estimates ($Billions) Soc/Other Health Services $2.68	**Medium-High:** Potential to build effective community-based political will to support funding and delivery; reasonable accessibility; highest potential for rationalization and collaboration to achieve efficiencies and higher overall levels of service. Capital Cost Estimates ($Billions) Soc/Other Health Services $2.68
	Effectiveness/efficiency of protection services	**Medium-Low:** Low potential service levels due to longest travel distances and least efficient distribution of facilities. Capital Cost Estimates ($Billions) Protection $2.83	**Medium:** Least travel distances but slower travel times due to greater potential for conflicts in central areas. Capital Cost Estimates ($Billions) Protection $2.83	**Medium-High:** Highest potential service levels due to efficient circulation patterns and response times. Capital Cost Estimates ($Billions) Protection $2.83

Appendix A
Analysis of Hospital-Based Human Services by Urban Structure Concept

The Ministry of Health has traditionally employed a bed guideline based on population to determine the number of hospital and extended care beds needed in the Province. The bed allocation methods and guidelines have, over time, enabled an equitable distribution of in-patient beds to hospital centres, counties and regions of Ontario.

The guidelines have been changed within the last ten years in keeping with an overall move to reduce reliance on in-patient accommodation. In the mid 1970's, bed guidelines for Acute Care called for 4.5 beds per 1,000 population in the Northern parts of the Province and 4.0 beds in the South. The current guidelines applied to the GTA, as they are elsewhere in the Province, are as follows:

Acute Care

3.5 beds/1,000 referral population in Southern Ontario.

Psychiatric Acute

0.4 beds/1,000 per hospital centre, acute referral population. (This excludes Provincially run Psychiatric Hospitals which serve more as regional centres).

General Rehabilitation

0.15 beds/1,000 resident population but assigned only to designated hospital centres such as Toronto.

Special Rehabilitation

0.1 beds/1,000 resident population but assigned only to teaching hospital centres. Toronto is one of five Health Science Centres.

Chronic Care

The minimum guideline is 11.9 beds/1,000 resident population aged 65 and over. This guideline is age-weighted, based on the latest chronic care hospital utilization.

Extended Care Beds

The minimum guideline is 3.5 beds/1,000 resident population, age weighted. Beds can be located in Homes for the Aged and licensed Nursing Homes.

Resident Population refers to the projected resident population based on Census figures. Referral Population refers to the accumulation of municipal resident populations assigned to a hospital centre in direct proportions to the percentage of acute separations from the hospital centre who reside in the municipality.

Capital Costs

Estimates are based on an updated, 1987 experience by the Ministry of Health for the construction of a new community general facility within the GTA region and a long term care hospital outside the GTA. The costs are total project costs inclusive of construction, fees and equipment and represent

$250,000 per acute care bed
$200,000 per chronic and rehabilitation bed
$ 60,000 per extended care bed (based on experience in nursing homes).

CHANGING POLICY

In 1986, The Ministry of Health announced the Province wide allocation of $1.2 billion towards the implementation of approximately 4,000 new acute and chronic hospital beds and the related enhancement of services. This initiative was directly related both to rapid growth in such areas of the Province as Greater Toronto and to the needs of an increasingly elderly population. Within the GTA, the addition of nearly 2,000 acute and chronic care beds, as well as the replacement of the Ontario Cancer Institute (Princess Margaret Hospital), was proposed. Project values could be in the order of $539 million with the Provincial Government providing up to two-thirds of the costs. Bed numbers were determined based on Ministry bed guidelines with input from District Health Council studies and reviews.

More recently, a series of studies have been undertaken in Ontario, each of which has made recommendations regarding the

rationalization and coordination of health services and the strengthening of community services. These studies have culminated in three reports received by the Ontario Government in 1987: Towards a Shared Direction for Health in Ontario (Evans Report), Health for All Ontario (Spasoff Report) and Health Promotion Matters in Ontario (Podborski Report). The report of the Ontario Health Review Panel (Evans Report), stated that:

> "Government must respond to pressures for expansion of the health budget to accommodate higher utilization, new technology and more hospital in-patient facilities, particularly for long term care. . . . we conclude efforts to slow down the growth in health budgets will be frustrated unless new incentives and organizational arrangements are found to make use of existing resources . . ."

The Premier's Council on Health Strategy was established in December 1987, in direct response to the findings of the three major reports. The Council's mandate is to examine policy options for the future direction of health and health care, to establish priorities and to build consensus for change in conjunction with health care providers and community representatives. To date, the report From Vision To Action has identified four elements of a strategic plan for the health care system. Of particular importance has been the further reinforcement of a need to "shift in emphasis and related resources to the development of community services as an equal partner with the institutional . . ."

In addressing the various study outcomes and recommendations, the policies within the Ministry of Health are in the process of changing. Specific to Capital Planning, three primary factors are impacting on the traditional methodologies used to determine hospital bed resources:

1. Health Reform

   Development of a comprehensive plan for health services aimed at strengthening community-based services, reducing dependence on in-patient beds and managing growth. Hospital beds will not be added in isolation of community-based services.

2. Premier's Council on Health Strategy

Calls for an assessment of all new bed commitments, including those made in 1986, with a view to supporting only those where a clear need is established but with funds also re-directed to alternatives to beds. This will be done within the context of a priority framework for capital funds.

3. Long Term Care Reform

   At the present time, long term care beds fall under two separate Ministries (Community and Social Services/Health) and within separate branches and hence budgets, with Health. Access to the beds in Homes for the Aged, and Hospitals is separate. The new system will provide a single, integrated admission process to long term care beds and funding which will be based primarily on the care needs of the individual (not the institution's currently separate criteria).

4. De-concentration of Specialized Services.

   Referral patterns reflect that percentage of the total population receiving treatment within their region of residence. The outflow from a region is representative of the remaining portion of the total population who travel outside their region of residence to seek specialized health care services.

   Within the GTA, current referral patterns indicated that the Durham, Peel and York populations received approximately 70% of their hospital care locally (within their region of residence) while the remaining 30% of their care was provided elsewhere. Typically, outflow consists of specific tertiary service visits associated with the Toronto Health Sciences Centre. Examples of such specialized (tertiary) services include cardiac surgery, certain oncology services, neo-natal intensive care, organ transplants, burn units, lithotripsy, etc.

   In 1989, referrals from the GTA regions alone to hospitals in Metropolitan Toronto resulted in a referral equalling 122.5% of the resident population of Metro Toronto. Over and above this were referrals from outside the GTA equal to a further 11.5% of the Metro population.

   One of the Health Ministry objectives over the next few years is to "de-concentrate" specialized services from the core to the regions as well as elsewhere in the Province. It is expected that

some tertiary services where appropriate, will be shifted to the outlying GTA regions which could, in turn, contribute to a greater self-sufficiency for health services on a local/regional level.

De-concentration does not necessarily imply a shift of facilities such as the provision of duplicate, self-contained hospitals in the outlying GTA regions nor is it limited to institutional-based services. Service delivery can be provided by means of Core area specialists making regular site visits, mobile equipment units or the development of satellite service units within existing facilities.

In projecting bed needs to 2021 for the purposes of this comparison of the three concepts, referral populations equal to 85% of the resident populations have been used to reflect the Ministry's longer term objective to de-concentrate services. It should also be noted that the attached tables do not provide for bed needs in Metro Toronto beyond those utilized by residents of the GTA.

Within the context of the GTA, de-concentration will likely result in an increase in institutional beds in the outlying regions as the number of "out"-referrals decreases. Proportionate reductions in the use of and need for beds in Metropolitan Toronto for tertiary services will also occur as more patients are treated within their regions of residence.

As a result of the deconcentration of specialized services operating costs can be expected to increase within the respective suburban GTA regions in all three concepts, however, these will be in part, offset by reductions in Metro.

LIKELY IMPACT OF CHANGING POLICIES ON THE GTA

Reduction in the Bed Guidelines: It is likely that the current guideline for acute care of 3.5 beds/1,000 referral population will be reduced again, as it was in the mid-1970's, to a possible 3.0 beds/1,000. Tables are attached indicating the effect of the reduction in bed guidelines compared to maintenance of the existing guideline for each of the three concepts.

Postponement of the construction of the approximately 2,000 new beds in the Greater Toronto Area is anticipated until comprehensive reviews of the health care and bed needs are finalized. The Ministry has indicated that if actual new beds cannot be justified as a result of these reviews, the funds allocated to those specific building projects will still be distributed to the area for alternative uses in meeting health needs. Additionally, flexibility of use in nursing home, home for the aged and chronic care beds, which will result from the Long Term Care Reform package, may obviate the need, for additional chronic beds in the short to medium term.

Although bed needs for hospitals and extended care facilities have been identified using the traditional and contemplated bed methodologies for acute care, the present lack of defined policies makes it impossible to accurately predict the nature of the health service system in 2021 and beyond. The Ministry's evolving visions for the development of community-based services is anticipated to impact significantly on the hospital system as it exists today.

The potential development of Ambulatory Care Centres with out-patient/same day surgery, the hospital-in-the-home concept, the Comprehensive Health Organization with the emphasis on disease prevention and health promotion combined with incentives when hospital utilization is proven to be reduced and other such methods of health delivery, as these are implemented, will all impact significantly on the traditional bed to population measures. The forecasts provided in this report can be taken as only one visible measure in defining the health care system by 2021. It cannot, however, be interpreted that the bed numbers will actually be needed or constructed since the impact of alternatives to institutionalization remain to be seen. It should also be noted that the Ministry of Health currently employs the Ministry of Treasury and Economics (MTE) population projections (Medium Fertility) when developing its bed allocation methodologies. The MTE figures are somewhat lower than the Clayton Research population projections. This means that the number of beds estimated in this study are somewhat higher than those estimated by MTE.

CONCEPT 1: SPREAD

Concept 1 reflects the existing growth patterns as they have been evolving over the past decade. The effect of spread development on the Health Ministry has been one of high cost to provide new and greatly expanded facilities in outlying areas as a direct result of rapid growth. Within the past 5 years, new facilities have been constructed in Mississauga, Scarborough and Markham.

Concept 1, Spread City, is costly in that new beds must be added in areas of growth but cannot be "taken away" from areas where there has either been no growth or where population has, in fact, declined. It thus provides the Ministry with the least flexibility in achieving a redistribution of facilities and services in the GTA.

Additionally, the referral patterns in a spread situation are not typical of those found elsewhere in the Province. Patients living outside the Metropolitan Toronto area will still come to Metro to see physicians even though others are available within their home community. Often this is work-community related as well as personal choice but the result is an extensive "cross-referral" pattern with implications for lower or under-utilization of health resources in the outlying areas and higher or over-utilization of those facilities in Metro providing services other than just tertiary care. Currently, facilities in the outlying GTA do not show under-utilization of services, given that additional beds are not in place to meet recent and rapid population growth. Ministry studies are now under way to examine in more detail the utilization of health care services in these areas.

One end result of the continuous "cross-referral" is the duplication of some services in the hospital system. The facilities in Spread City are sufficiently separate in terms of distance to meet individual community needs but this distance also creates duplication, e.g. emergency department open 24 hours a day, Intensive Care Units, Obstetrical services, etc. The community hospitals can become generalists in all areas of service. While this is a logical outcome of spread development, the drawbacks are that the size of the Units may often be too small to justify the employment of medical specialists to enhance the services beyond a secondary level, nor is it always appropriate in such facilities.

Ministry policies on the acquisition of high technology equipment such as CT Scans, MRI, currently relate to units per population. While the intent of the policies is to ensure equitable distribution and access on a Province-wide basis, the sheer population numbers for the hospital centres in the GTA are large enough to, in part "justify" such items. The Ministry's dilemma, now has become one of trying to restrain the over-introduction of high technology equipment which would have the result of increasing levels of service beyond those normally expected in a community general hospital.

Transportation costs are higher, e.g. getting clients to hospitals/clinics and getting ambulances, Public Health, VON to clients as the distances between are greater. Distances at the present time also are greater to access those tertiary/specialty services. This is not necessarily inappropriate but it does create access problems, e.g. to Princess Margaret in Toronto or to Hamilton Civic for Cancer treatment, to Wellesley for Lithotripsy treatments. It also creates access problems from the standpoint of Time/Scheduling delays at the host sites when they serve as treatment facilities on a Provincial basis.

One benefit of Concept 1 for new facility development is the general availability of larger tracts of land; 20-24 acres is preferable for the newer facilities that have been built in recent years. This includes provision for Helipad construction. Larger land tracts permit the development of adjacent, related health services such as medical clinics, Public Health offices, private labs, ambulance centres when there is sufficient volume to generate demand for these services.

CONCEPT 2: GENERAL

With this option there is greater potential to intensify utilization of existing facilities. This has benefits for capital cost "avoidance" in the outlying areas, i.e. new facilities need not be developed without continued rapid growth.

Intensification could result in increased specialization in the existing hospitals. e.g. Single Obstetrics, Trauma, Paediatrics, Cardiovascular, Geriatric Centres, Cancer Treatment. Part of this scenario already exists and could be enhanced on a larger scale.

New construction/expansion and to some extent, rehabilitation costs would need to occur, particularly for Emergency Outpatient expansions at existing facilities. In the event that the Ministry continues to move away from new beds, ambulatory service expansion will still be required whether this be provided at existing hospitals or in new "freestanding" centres spread throughout the GTA. Operating costs may be reduced through the more intensive use of and/or rationalization of facilities, the latter being more easily achieved when distance between facilities is not a problem. It is unlikely that actual "savings" would accrue since expanded services would be necessary to meet increased demand in some areas.

Drawbacks to the greater specialization of hospitals include an increased demand for ambulance services required to "transfer" clients from one facility to another for the specialized tests. While this one aspect of the transportation costs may be higher, the rest are likely to be lower since facilities are closer together and there would be

greater ease of access/less distance for clients and services. There is, however, much greater need for the enhancement of rapid transit.

Larger tracts of land are not expected to be available in this concept relative to Concept 1 for major expansions of existing facilities or the development of new facilities. Provision of helicopter landing space is more of a problem in Concept 2.

There would not necessarily be the same sense of "Community" around the hospitals. Specialization would tend to create anonymity in some cases by virtue of size and in others because of a lack of "contact". (All members of a family would not necessarily be associated with one facility). This has the potential to curb fund raising efforts by individual facilities.

Intensification presents the highest cost in capital dollars for new bed development in the form of chronic and extended care beds. This is due to the projected concentration of the elderly over aged 65, in the Metropolitan Toronto area. Compared to the suburban GTA regions, Metro Toronto has a much older population.

CONCEPT 3: NODAL

Concept 3 reflects the development of higher density nodes across the GTA interconnected by rapid transit systems.

Increased populations and hence demands within the suburban GTA regions in part, provide more justification for the deconcentration of more services from the Metro Toronto facilities. This may, in turn, result in increased operating costs relative to Concept 1, Spread.

The availability of land (more than may be available in Concept 2), would lend itself to the co-location of various health and community support services on the hospital grounds. In this way, a nucleus of health and related services could serve as a "One Stop Shopping" centre compared to the site specialization which is likely to occur under Concept 2 or to the potential generalization of services in Concept 1.

In terms of capital costs, the Nodal concept is a compromise between the Spread and Intensified Concepts. This is due to a better distribution of the elderly throughout the GTA rather than a large concentration within Metropolitan Toronto under Concept 2.

The Nodal Concept in many ways, represents a blending of Concepts 1 and 2. It has the potential for a more systematic development of health and related services in a clustering of facilities with each node.

Travel distances between nodes are less than between the facilities under Concept 1, Spread. Population is greater to justify more diversity in terms of services under Concept 3 but not to the extent that is possible with intensification under Concept 2.

EXHIBIT A - HOSPITAL BED ANALYSIS BASED ON 3.5 ACUTE CARE BEDS PER 1,000 POPULATION FOR

CONCEPT 1 - SPREAD

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
DURHAM	683,134	111,421	14.0%	794,555	85.0%	675,372	ACUTE	811	2,364	1553
							ACUTE PSYCH	24	270	246
							GEN.REH.	40	119	79
							SPEC.REH.		79	79
							CHRONIC	191	1,326	1135
							EXT.CARE	1,612	2,781	1169
HALTON	503,091	89,484	15.1%	592,575	85.0%	503,689	ACUTE	772	1,763	991
							ACUTE PSYCH	59	201	142
							GEN.REH.	35	89	54
							SPEC.REH.		59	59
							CHRONIC	88	1,065	977
							EXT.CARE	749	2,074	1325
METRO TORONTO	1,856,246	571,980	23.6%	2,428,226	122.2%	2,967,058	ACUTE	10,335	10,385	50
							ACUTE PSYCH	859	1,187	328
							GEN.REH.	834	364	-470
							SPEC.REH.	349	243	-106
							CHRONIC	3,569	6,807	3238
							EXT.CARE	9,243	8,499	-744
PEEL	1,005,332	193,049	16.1%	1,198,381	85.0%	1,018,624	ACUTE	1,166	3,565	2399
							ACUTE PSYCH	140	407	267
							GEN.REH.	40	180	140
							SPEC.REH.		120	120
							CHRONIC	172	2,297	2125
							EXT.CARE	1,432	4,194	2762
YORK	871,464	135,239	13.4%	1,006,703	85.0%	855,698	ACUTE	753	2,995	2242
							ACUTE PSYCH	88	342	254
							GEN.REH.	28	151	123
							SPEC.REH.		101	101
							CHRONIC	297	1,609	1312
							EXT.CARE	1,356	3,523	2167

CONCEPT 1 - SPREAD 3.5 beds/1,000 Acute Care

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
								GTA TOTAL		
GREATER TORONTO AREA	4,919,250	1,101,173	18.3%	6,020,423	100%	6,020,440	ACUTE	13,837	21,072	7,235
							ACUTE PSYCH	1,170	2,408	1,238
							GEN.REH.	977	903	(74)
							SPEC.REH.	349	602	253
							CHRONIC	4,317	13,104	8,787
							EXT.CARE	14,392	21,072	6,680

CAPITAL COST ESTIMATES	
ACUTE	$1,808,635,000
ACUTE PSYCH	$247,635,200
GEN.REH.	
SPEC.REH.	$50,608,800
CHRONIC	$1,757,391,740
EXT.CARE	$400,772,400
	$4,265,043,140

EXHIBIT A - HOSPITAL BED ANALYSIS BASED ON 3.5 ACUTE CARE BEDS PER 1,000 POPULATION FOR

Concept 2 - Central

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
DURHAM	408,391	66,609	14.0%	475,000	85.0%	403,750	ACUTE	811	1,413	602
							ACUTE PSYCH	24	162	138
							GEN.REH.	40	71	31
							SPEC.REH.		48	48
							CHRONIC	191	793	602
							EXT.CARE	1,612	1,663	51
HALTON	320,919	57,081	15.1%	378,000	85.0%	321,300	ACUTE	772	1,125	353
							ACUTE PSYCH	59	129	70
							GEN.REH.	35	57	22
							SPEC.REH.		38	38
							CHRONIC	88	679	591
							EXT.CARE	749	1,323	574
METRO TORONTO	2,904,892	895,108	23.6%	3,800,000	108.8%	4,133,150	ACUTE	10,335	14,466	4131
							ACUTE PSYCH	859	1,653	794
							GEN.REH.	834	570	-264
							SPEC.REH.	349	380	31
							CHRONIC	3,569	10,652	7083
							EXT.CARE	9,243	13,300	4057
PEEL	694,616	133,384	16.1%	828,000	85.0%	703,800	ACUTE	1,166	2,463	1297
							ACUTE PSYCH	140	282	142
							GEN.REH.	40	124	84
							SPEC.REH.		83	83
							CHRONIC	172	1,587	1415
							EXT.CARE	1,432	2,898	1466
YORK	467,457	72,543	13.4%	540,000	85.0%	459,000	ACUTE	753	1,607	854
							ACUTE PSYCH	88	184	96
							GEN.REH.	28	81	53
							SPEC.REH.		54	54
							CHRONIC	297	863	566
							EXT.CARE	1,356	1,890	534

Concept 2 - Central

3.5 beds/1,000 Acute Care

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
								GTA TOTAL		
GREATER TORONTO AREA	4,795,697	1,224,725	20.3%	6,020,422	100.0%	6,021,000	ACUTE	13,837	21,074	7,236
							ACUTE PSYCH	1,170	2,408	1,238
							GEN.REH.	977	903	(74)
							SPEC.REH.	349	602	253
							CHRONIC	4,317	14,574	10,257
							EXT.CARE	14,392	21,074	6,682

CAPITAL COST ESTIMATES

ACUTE	$1,809,125,000
ACUTE PSYCH	$247,680,000
GEN.REH.	
SPEC.REH.	$50,620,000
CHRONIC	$2,051,445,500
EXT.CARE	$400,890,000
	$4,559,760,500

EXHIBIT A - HOSPITAL BED ANALYSIS BASED ON 3.5 ACUTE CARE BEDS PER 1,000 POPULATION FOR

CONCEPT 3 - NODAL

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
DURHAM	585,503	95,497	14.0%	681,000	85.0%	578,850	ACUTE	811	2,026	1215
							ACUTE PSYCH	24	232	208
							GEN.REH.	40	102	62
							SPEC.REH.		68	68
							CHRONIC	191	1,136	945
							EXT.CARE	1,612	2,384	772
HALTON	462,701	82,299	15.1%	545,000	85.0%	463,250	ACUTE	772	1,621	849
							ACUTE PSYCH	59	185	126
							GEN.REH.	35	82	47
							SPEC.REH.		55	55
							CHRONIC	88	979	891
							EXT.CARE	749	1,908	1159
METRO TORONTO	2,140,447	659,553	23.6%	2,800,000	117.3%	3,283,000	ACUTE	10,335	11,491	1156
							ACUTE PSYCH	859	1,313	454
							GEN.REH.	834	420	-414
							SPEC.REH.	349	280	-69
							CHRONIC	3,569	7,849	4280
							EXT.CARE	9,243	9,800	557
PEEL	998,301	191,699	16.1%	1,190,000	85.0%	1,011,500	ACUTE	1,166	3,540	2374
							ACUTE PSYCH	140	405	265
							GEN.REH.	40	179	139
							SPEC.REH.		119	119
							CHRONIC	172	2,281	2109
							EXT.CARE	1,432	4,165	2733
YORK	695,992	108,008	13.4%	804,000	85.0%	683,400	ACUTE	753	2,392	1639
							ACUTE PSYCH	88	273	185
							GEN.REH.	28	121	93
							SPEC.REH.		80	80
							CHRONIC	297	1,285	988
							EXT.CARE	1,356	2,814	1458

CONCEPT 3 - NODAL 3.5 Beds/1,000 Acute Care

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
								GTA TOTAL		
GREATER TORONTO AREA	4,883,366	1,137,056	18.9%	6,020,422	100.00%	6,020,000	ACUTE	13,837	21,070	7,233
							ACUTE PSYCH	1,170	2,408	1,238
							GEN.REH.	977	903	(74)
							SPEC.REH.	349	602	253
							CHRONIC	4,317	13,531	9,214
							EXT.CARE	14,392	21,070	6,678

CAPITAL COST ESTIMATES

ACUTE	$1,808,250,000
ACUTE PSYCH	$247,600,000
GEN.REH.	
SPEC.REH.	$50,600,000
CHRONIC	$1,842,793,280
EXT.CARE	$400,680,000
	$4,349,923,280

EXHIBIT A - HOSPITAL BED ANALYSIS BASED ON 3.0 ACUTE CARE BEDS PER 1,000 POPULATION FOR

CONCEPT 1 - SPREAD

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
DURHAM	683,134	111,421	14.0%	794,555	85.0%	675,372	ACUTE	811	2,026	1215
							ACUTE PSYCH	24	270	246
							GEN.REH.	40	119	79
							SPEC.REH.		79	79
							CHRONIC	191	1,326	1135
							EXT.CARE	1,612	2,781	1169
HALTON	503,091	89,484	15.1%	592,575	85.0%	503,689	ACUTE	772	1,511	739
							ACUTE PSYCH	59	201	142
							GEN.REH.	35	89	54
							SPEC.REH.		59	59
							CHRONIC	88	1,065	977
							EXT.CARE	749	2,074	1325
METRO TORONTO	1,924,646	571,980	23.6%	2,428,226	122.2%	2,967,058	ACUTE	10,335	8,901	-1434
							ACUTE PSYCH	859	1,187	328
							GEN.REH.	834	364	-470
							SPEC.REH.	349	243	-106
							CHRONIC	3,569	6,807	3238
							EXT.CARE	9,243	8,499	-744
PEEL	1,005,332	193,049	16.1%	1,198,381	85.0%	1,018,624	ACUTE	1,166	3,056	1890
							ACUTE PSYCH	140	407	267
							GEN.REH.	40	180	140
							SPEC.REH.		120	120
							CHRONIC	172	2,297	2125
							EXT.CARE	1,432	4,194	2762
YORK	871,464	135,239	13.4%	1,006,703	85.0%	855,698	ACUTE	753	2,567	1814
							ACUTE PSYCH	88	342	254
							GEN.REH.	28	151	123
							SPEC.REH.		101	101
							CHRONIC	297	1,609	1312
							EXT.CARE	1,356	3,523	2167

CONCEPT 1 - SPREAD 3.0 beds/1,000 Acute Care

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
								GTA TOTAL		
GREATER TORONTO AREA	4,919,250	1,101,173	18.3%	6,020,423	100.0%	6,020,440	ACUTE	13,837	18,061	4,224
							ACUTE PSYCH	1,170	2,408	1,238
							GEN.REH.	977	903	(74)
							SPEC.REH.	349	602	253
							CHRONIC	4,317	13,104	8,787
							EXT.CARE	14,392	21,072	6,680

CAPITAL COST ESTIMATES		
	ACUTE	$1,056,080,000
	ACUTE PSYCH	$247,635,200
	GEN.REH.	
	SPEC.REH.	$50,608,800
	CHRONIC	$1,757,391,740
	EXT.CARE	$400,772,400
		$3,512,488,140

EXHIBIT A - HOSPITAL BED ANALYSIS BASED ON 3.0 ACUTE CARE BEDS PER 1,000 POPULATION FOR

Concept 2 - Central

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
DURHAM	408,391	66,609	14.0%	475,000	85.0%	403,750	ACUTE	811	1,211	400
							ACUTE PSYCH	24	162	138
							GEN.REH.	40	71	31
							SPEC.REH.		48	48
							CHRONIC	191	793	602
							EXT.CARE	1,612	1,663	51
HALTON	320,919	57,081	15.1%	378,000	85.0%	321,300	ACUTE	772	964	192
							ACUTE PSYCH	59	129	70
							GEN.REH.	35	57	22
							SPEC.REH.		38	38
							CHRONIC	88	679	591
							EXT.CARE	749	1,323	574
METRO TORONTO	2,904,892	895,108	23.6%	3,800,000	108.8%	4,133,150	ACUTE	10,335	12,399	2064
							ACUTE PSYCH	859	1,653	794
							GEN.REH.	834	570	-264
							SPEC.REH.	349	380	31
							CHRONIC	3,569	10,652	7083
							EXT.CARE	9,243	13,300	4057
PEEL	694,616	133,384	16.1%	828,000	85.0%	703,800	ACUTE	1,166	2,111	945
							ACUTE PSYCH	140	282	142
							GEN.REH.	40	124	84
							SPEC.REH.		83	83
							CHRONIC	172	1,587	1415
							EXT.CARE	1,432	2,898	1466
YORK	467,457	72,543	13.4%	540,000	85.0%	459,000	ACUTE	753	1,377	624
							ACUTE PSYCH	88	184	96
							GEN.REH.	28	81	53
							SPEC.REH.		54	54
							CHRONIC	297	863	566
							EXT.CARE	1,356	1,890	534

Concept 2 - Central

3.0 beds/1,000 Acute Care

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
								GTA TOTAL		
GREATER TORONTO AREA	4,795,697	1,224,725	20.3%	6,020,422	100.0%	6,021,000	ACUTE	13,837	18,063	4,226
							ACUTE PSYCH	1,170	2,408	1,238
							GEN.REH.	977	903	(74)
							SPEC.REH.	349	602	253
							CHRONIC	4,317	14,574	10,257
							EXT.CARE	14,392	21,074	6,682

CAPITAL COST ESTIMATES

ACUTE	$1,056,500,000
ACUTE PSYCH	$247,680,000
GEN.REH.	
SPEC.REH.	$50,620,000
CHRONIC	$2,051,445,500
EXT.CARE	$400,890,000
	$3,807,135,500

EXHIBIT A - HOSPITAL BED ANALYSIS BASED ON 3.0 ACUTE CARE BEDS PER 1,000 POPULATION FOR

CONCEPT 3 - NODAL

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
DURHAM	585,503	95,497	14.0%	681,000	85.0%	578,850	ACUTE	811	1,737	926
							ACUTE PSYCH	24	232	208
							GEN.REH.	40	102	62
							SPEC.REH.		68	68
							CHRONIC	191	1,136	945
							EXT.CARE	1,612	2,384	772
HALTON	462,701	82,299	15.1%	545,000	85.0%	463,250	ACUTE	772	1,390	618
							ACUTE PSYCH	59	185	126
							GEN.REH.	35	82	47
							SPEC.REH.		55	55
							CHRONIC	88	979	891
							EXT.CARE	749	1,908	1159
METRO TORONTO	2,140,447	659,553	23.6%	2,800,000	117.3%	3,283,000	ACUTE	10,335	9,849	486
							ACUTE PSYCH	859	1,313	454
							GEN.REH.	834	420	414
							SPEC.REH.	349	280	-69
							CHRONIC	3,569	7,849	4280
							EXT.CARE	9,243	9,800	557
PEEL	998,301	191,699	16.1%	1,190,000	85.0%	1,011,500	ACUTE	1,166	3,035	1869
							ACUTE PSYCH	140	405	265
							GEN.REH.	40	179	139
							SPEC.REH.		119	119
							CHRONIC	172	2,281	2109
							EXT.CARE	1,432	4,165	2733
YORK	695,992	108,008	13.4%	804,000	85.0%	683,400	ACUTE	753	2,050	1297
							ACUTE PSYCH	88	273	185
							GEN.REH.	28	121	93
							SPEC.REH.		80	80
							CHRONIC	297	1,285	988
							EXT.CARE	1,356	2,814	1458

CONCEPT 3 - NODAL 3.0 Beds/1,000 Acute Care

COUNTY	POPULATION 0-64	POPULATION 65+	% 65+	TOTAL POP 2021	REFERRAL GTA 2021	REFERRAL POP 2021	TYPE OF BED	INVENTORY 1989	ALLOCATION 2021	NET NEW 2021
								GTA TOTAL		
GREATER TORONTO AREA	4,883,366	1,137,056	18.9%	6,020,422	100.0%	6,020,000	ACUTE	13,837	18,060	4,223
							ACUTE PSYCH	1,170	2,408	1,238
							GEN.REH.	977	903	(74)
							SPEC.REH.	349	602	253
							CHRONIC	4,317	13,531	9,214
							EXT.CARE	14,392	21,070	6,678

CAPITAL COST ESTIMATES

ACUTE	$1,055,750,000
ACUTE PSYCH	$247,600,000
GEN.REH.	
SPEC.REH.	$50,600,000
CHRONIC	$1,842,793,280
EXT.CARE	$400,680,000
	$3,597,423,280

Appendix B
Analysis of Primary and Secondary Schools by Urban Structure Concept

In developing projections for demand and capital cost in 2021 for the elementary and secondary schools in the GTA, the following information was required.

POPULATION

The 5-14 year old grouping constitutes the elementary school population from senior kindergarten to Grade 8 inclusive.

The 15-19 year old grouping constitutes the secondary school population from Grade 9 to Grade 13 (or the equivalent age span in which to obtain the necessary high school credits for University entrance).

INVENTORY OF EXISTING (1990) CAPACITY

The Ministry of Education has provided an inventory of the rated capacity for public and separate schools within the GTA regions.

The Ministry's definition of rated capacity encompasses the existing stock of school rooms regardless of present use or current (or changed) staff to pupil ratios. Some of the existing, school properties for example, may presently be alternatively used/leased out. The Ministry position is that the existing supply would be re-opened prior to any new building capacity being approved. The rated capacity does not include school projects which are currently under construction and/or recently approved to proceed with planning.

The Boards of Education dispute the Ministry's rated capacity figures. Board estimates would tend to lower the Ministry's rated capacity by 10% to 15% to produce an estimate called the "functionally rated" capacity. Differences between the two capacities relate primarily to the staff to pupil ratios (i.e. independent of actual classroom size) which are effected both through Ministry of Education and Board of Education policies.

Education staff indicate that the Ministry's rated capacity would reflect an average class size of 35 for elementary and 30 for secondary schools compared to the Board's requests for 28 elementary and 24 secondary.

PARTICIPATION FACTOR

The Ministry of Education receives 10 year forecasts of pupil placements from the individual Boards of Education. These are generally based on a historical "yield per household" and will vary from region to region. In discussing the methodology by which IBI could develop long range capital costs based on demand in the three Concepts, the establishment of an average Participation Factor (PF)

applied to the total age group population was agreed upon. The PF for elementary schools is 99%; this excludes private school students and others who would not be enrolled into the publicly funded school system.

The PF for secondary schools is 85%; this excludes dropouts, private school entrants, etc. Recognizing that the retention rates for 17 year olds is only 72%, a figure which rises substantially for 18 year olds who often re-enter the secondary school system, an average of 85% has been employed in this study.

The PF was applied to the school age populations to estimate demand for places. This, in turn, was compared to the existing inventory to achieve a projected deficit/surplus in 2021.

COST PER PUPIL PLACE

Costs provided by the Ministry of Education based on recent tender experiences have been used in the GTA Study. Elementary school costs average $9,300 per pupil place plus an average 10% factor for equipment and furnishing for a total of $10,300.

Secondary school costs are $14,000 plus an average of 15% for equipment and furnishings for a total of $16,100 per pupil place. Ministry figures **exclude** the cost of land.

CURRENT TRENDS

DECLINING ENROLLMENT

In 1986, the 5-19 age group in Metro Toronto comprised 17.76% of the total population. This will reduce to 15.03% and 13.0% in 2011 and 2021 based on the Clayton Research projections. By contrast, the suburban GTA regions had an average of 23.48% of the population in the 5-19 age group in 1986 with estimated reductions to an average of 20.1% in 2011 and 18.8% in 2021. The populations in the suburban GTA regions are generally younger than that in Metropolitan Toronto and the resultant effect on the schools in the Core has been profound.

Metro Toronto Boards of Education are currently predicting a 25% decline in primary and secondary school enrollment over the next few years. Over 39 schools have recently closed because of shifts in population to the outlying regions combined with the decreasing proportion of the population which is at school age. These two factors have resulted in a massive surplus capacity (142,722 pupil places) in Metro Toronto based on a rated capacity provided by the Ministry of Education. With Concept 2 (Intensified), the opportunity for re-opening unused capacity makes this the least cost option.

DAY CARE

In June of 1987, the Ontario Government announced changes in child care policy through a partnership of the Ministries of Education and Community and Social Services. Under this initiative, both Ministries have cooperated to encourage the use of both new and existing school space for non-profit child care services for children aged 3 years 8 months to 12. All new schools built since 1988-89 have provided day care space for school age children of 2,350 sq.ft. in elementary and 4,500 sq.ft. in secondary schools. At the present time, 30% of child care in the Province is carried out as a result of this initiative.

Since the primary thrust of the joint child care initiative has been within the context of new school construction, Concept 1, Spread, and Concept 3, Nodal would promote expansion of the initiative. With Concept 2, existing space is now available in which to readily develop/expand day care spaces. Travel distances from the adjacent neighbourhoods to schools are less than with the Spread, Concept 1 - a factor which could promote higher use of facilities.

ALTERNATIVE USE OF BUILDINGS

A specific by-product of declining enrollment is the dilemma of finding alternative uses for vacated school premises. Alternative use of school buildings has the potential to be more positive in Metro Toronto than in the suburban regions. This is largely due to increased accessibility in Metro Toronto in terms of public and private transportation and travel distance, along with potentially greater versatility given the higher concentration of population near the building which, in turn, can generate a wider variety of options with more intensive use of each.

As declining enrollment in the suburban GTA regions over the next 30 years becomes more visible, alternative use under Concept 1, Spread, can be more problematic. The combination of greater distances, lower density and less intensive use inhibits the potential for alternative use. Opportunities are greatly enhanced with Concept 2 (Intensified) and somewhat improved with Concept 3 (Nodal).

EXHIBIT B-1:
GREATER TORONTO AREA
PROJECTED COST OF EDUCATION
PRIMARY AND SECONDARY EDUCATION

REGION	1991 POPULATION 5-14 ELEMENTARY	15-19 SECONDARY	1990 MIN. OF EDUC DEMAND/PARTIC. FACT ELEM.	SECOND	1990 MIN. OF EDUC. (RATED CAPACITY) ELEM.	SECOND.	EXISTING SURPLUS/(DEFICIT) ELEM	SECOND	CONCEPT	2021 POPULATION 5-14	15-19	PROJECTED SURPLUS/(DEFICI ELEM	SECOND	COST (EXCL. LAND) ELEM $10,300	SECOND. $16,100	TOTAL COST (L. & S.)
DURHAM	62,531	31,060	99.0%	85.0%	55,061	22,767	(6,845)	(3,634)	1	102,020	50,690	(45,939)	(20,320)	473,169,640	327,143,950	800,313,590
									2	60,989	30,303	(5,318)	(2,991)	54,776,533	48,147,855	102,924,388
									3	87,440	43,446	(31,505)	(14,162)	324,497,480	228,009,810	552,507,190
HALTON	42,994	24,158	99.0%	85.0%	50,727	26,104	8,163	5,570	1	71,495	36,803	(20,053)	(5,179)	206,546,415	83,374,655	289,921,070
									2	45,606	23,476	5,577	6,149			
									3	65,755	33,848	(14,370)	(2,667)	148,015,635	42,935,480	190,951,115
PEEL	110,272	56,382	99.0%	85.0%	108,828	45,645	(341)	(2,280)	1	141,498	71,677	(31,255)	(15,280)	321,926,706	246,015,245	567,941,951
									2	97,766	49,524	12,040	3,550			
									3	140,508	71,176	(30,275)	(14,855)	311,831,676	239,159,060	550,990,736
YORK	78,001	39,261	99.0%	85.0%	74,117	35,055	(3,104)	1,683	1	135,220	67,166	(59,751)	(22,036)	615,433,240	354,781,210	970,214,450
									2	72,533	36,028	2,309	4,431			
									3	107,933	53,642	(32,737)	(10,541)	337,187,701	169,705,270	506,892,971
METRO	248,032	121,657	99.0%	85.0%	388,274	159,282	142,722	55,874	1	208,172	107,382	182,184	68,007			
									2	325,774	168,045	65,758	16,444			
									3	240,044	123,823	150,630	54,032			
GTA	541,830	272,518			677,007	288,853	140,595	57,213	1	658,405	333,718	25,186	5,193	1,617,076,001	1,011,315,060	2,628,391,061
									2	602,668	307,376	80,366	27,583	54,776,533	48,147,855	102,924,388
									3	641,680	325,935	41,744	11,808	1,121,532,392	679,809,620	1,801,342,012

Appendix C
Analysis of Colleges by Urban Structure Concept

TRENDS

The Ontario college system was originally intended to provide an accessible post-secondary alternative to universities for those wishing to acquire employable skills, and in other cases, a pre-university education for those wishing to prepare for university entry. Community colleges were to be located so as to enhance accessibility and convenience for designated service populations. It was assumed that students might continue to live at home after high school graduation or live elsewhere within the local housing stock of the community being served. Similar general course offerings were found at most colleges in addition to particular special areas of arts, vocational training, specialized skills programs, etc.

Current trends however favour increased specialization. Enrollment and demand for specific program areas within the GTA shift dramatically with periodic changes in employment potential and with the general economy of southern Ontario. Students are drawn to each college more on the basis of specific program excellence than by travel convenience. For example, approximately 80% of Humber College's enrollment currently is drawn from beyond its traditional service boundaries of Etobicoke and North York. Regional transportation access and affordable student housing are now essential development considerations. In addition to serving as pre-university or a university alternative, colleges increasingly serve the high-tech service and production industries to upgrade the employment skills of the present work force as rapid technological change requires.

As a consequence, future college development will increasingly acquire the following characteristics:

- locations at major points of regional transportation access;
- high utilization of public transit;
- convenience to concentrations of service and production employment;
- facilities which are spacially and mechanically flexible and economically adaptable;
- convenient and affordable housing (there is a current trend to increase on-site student housing inventories);

- nearby or on-site amenities and personal services such as shopping, child care and recreation.

Historical participation factors provided by the Ministry of Colleges and Universities by age group are as follows:

Age	17 to 19	7.66%
	20 to 24	5.16%
	25 to 29	0.86%
	30 to 34	0.45%
	35 plus	0.90%
Average System Total PF		1.21%

To reflect future treads for the purpose of forecasting demand for college places to the year 2021 this analysis has assumed increases in the work force participation of people over the age of 25 resulting in an adjusted average system total PF of 1.91%.

SPACE AND LAND REQUIREMENTS

Compared with universities, colleges are typically more efficient spatially. As programs are developed accommodation is found in basic industrial type space leased nearby or constructed on the campus. Growth of existing colleges is in most cases limited by the lack of land. Therefore most growth of new college spaces over the next 30 years may occur at new locations on purchased land (some land is now being acquire for future development to the north of Metro) as satellites of existing institutional administrations.

For purposes of this analysis and forecast the following assumptions have been made:

- no current space deficit is included; because enrollments and programs tend to fluctuate and change in the short-term, it is assumed that any short-term space deficiencies are able to be met by current operating and capital expenditures;
- average participation factor = 1.91% of future population in 2021;
- average 10.2 m^2 or 110 sq.ft. per student FTE to obtain total gross floor area required;
- average current total construction cost of \$1290/m^2 or \$120/sq.ft.;

- equals $13,200/student FTE;
- average 300 student FTE/acre of land required for buildings, open space and parking.

CAPITAL COST FORECASTS

While construction costs of new facilities to serve the net increase in college student FTE by 2021 would remain constant across the GTA, land costs could vary dramatically according to location and the density of buildings constructed (affecting land area required). The following average land costs by region in current (1990) dollars have been assumed:

Halton	$250,000/acre
Peel	560,000/acre
York	430,000/acre
Metro	765,000/acre
Durham	290,000/acre

The following table indicates capital cost estimates for colleges to the year 2021, applying the total system participation factor discussed above to population forecasts by age for the three concepts.

APPENDIX C - COLLEGES

MUNICIPALITY	CONCEPT	2021 POP'N ($'000s) (1)	LESS 1986 POP'N ($'000s) (1)	EQUALS NET GROWTH IN 2021 ($'000s) (1)	NET STUDENT FTE @ 1.91% PF	CONSTRUCTION COST @ $13,200 PER FTE ($ '000,000s)	PLUS ACRES OF LAND @ 300 FTE/ACRE	LAND COST $/ACRE ($'000s)	TOTAL LAND COST ($'000s)	TOTAL CAPITAL COST CONSTRUCTION AND LAND ($ '000,000s)
DURHAM	1	617	237	380	7,263	96	24.21	$180	$4,358	$100
	2	369	237	132	2,523	33	8.41	$180	$1,514	$35
	3	529	237	293	5,587	74	18.62	$180	$3,352	$77
HALTON	1	202	202	0	0	0	0.00	$240	$0	$0
	2	468	202	266	5,076	67	16.92	$240	$4,061	$71
	3	432	202	230	4,388	58	14.63	$240	$3,510	$61
PEEL	1	952	427	525	10,029	132	33.43	$360	$12,034	$144
	2	657	427	231	4,405	58	14.68	$360	$5,286	$63
	3	945	427	518	9,897	131	32.99	$360	$11,876	$143
YORK	1	769	251	519	9,905	131	33.02	$470	$15,518	$146
	2	413	251	162	3,092	41	10.31	$470	$4,844	$46
	3	615	251	364	6,961	92	23.20	$470	$10,905	$103
METRO	1	2,058	1,748	310	5,920	78	19.73	$800	$15,788	$94
	2	3,234	1,748	1,486	28,383	375	94.61	$800	$75,687	$450
	3	2,371	1,748	624	11,910	157	39.70	$800	$31,761	$189
GTA TOTAL	1	4,598	2,864	1,734	33,117	437	110.39		$47,698	$485
	2	5,140	2,864	2,276	43,478	574	144.93		$91,392	$665
	3	4,892	2,864	2,028	38,743	511	129.14		$61,405	$573

(1) Rounded off to nearest 1,000.

Appendix D
Analysis of Universities By Urban Structure Concept

CURRENT SPACE DEFICIENCIES

University space standards are established by the Council of Ontario Universities (COU). The most current (1988) COU Report indicates that in recent years, universities within the GTA (York, University of Toronto and Ryerson) have experienced increasing space deficiencies resulting from growth in enrollment and staff which has exceeded capital funding. Currently these GTA institutions are deficient by some 111,845 m^2.

ANALYSIS

For purposes of this analysis, the enrollment projections of each university have not been used, in favour of applying current participation factors (PF's) reported by the Ministry of Colleges and Universities, to population forecasts to 2021.

The PF's used are as follows (enrollments from outside the GTA have been held constant):

Age	17 to 19	7.49%
	20 to 24	13.67%
	25 to 29	1.46%
	30 to 34	0.47%
	35 plus	0.08%
	Average	2.29%

Participation rates are expected to rise over the next several years due to an increasing interest in adult education. Increased rates may not, however, affect the overall space requirements on the university campuses depending on the availability and use of electronic services: Education within the confines of the home environment via computerization and television may, in fact, reduce the need for additional space. TV Ontario currently provides some classroom A/V programming for use within the middle school system.

CAMPUS DEVELOPMENT

The university sector serves the GTA-wide population (and beyond) and as such, is not so much affected by GTA population growth scenarios as it is by the availability of land on which to expand existing services and by accessibility patterns.

York University now owns some 500 acres of land at its main campus and is the existing campus with the greatest capability for significant expansion. Expansion on this site would also be more operationally

efficient than developing a totally new institution at a separate location. The availability of land is of extreme importance in examining options for expansion versus the need to construct new facilities as either satellites of existing organizations or entirely new ones. The University of Toronto also has unique capabilities of expansion: its Scarborough and Erindale campuses both have expansion capacities, and by virtue of its downtown location, the main St. George Campus could acquire additional building sites near enough to expand although not necessarily as one cohesive campus.

FUTURE CAMPUS LOCATIONS

Additional space to accommodate population growth to 2021 represents the equivalent of perhaps 2-3 new university campuses. Not only is land availability an issue (each new campus might consume in the order of 100-200 acres), regional accessibility is also key.

Lócational considerations vary for each concept:

- Concept 1: Maximum new university enrollment will tend to live in the suburbs, where land for new universities would be most available and affordable, therefore new campuses would be expected to locate in the regions, together with expansion of York, Scarborough and Erindale.

- Concept 2: York, Scarborough and Erindale would be expected to expand, together with the University of Toronto main campus to a lesser degree. New campuses accessible to the more concentrated population would tend to be on more costly land and constructed at higher densities.

- Concept 3: In addition to expanding existing universities, new campus locations at major nodes would take advantage of assumed regional transit accessibility and would contribute to the development of integrated human services at these nodes.

APPENDIX D

UNIVERSITIES

GTA - EXISTING 1986							2021 - FORECAST							
FACILITY	POPULATION 1986 17+	FTE STUDENTS	INVENTORY NSM	SPACE GENERATED		SURPLUS/ (DEFICIT) NSM	POPULATION 2021 17+	FTE STUDENTS @2.29% P.F.	SPACE GENERATED		SURPLUS/ (DEFICIT) NSM	BUILDING COST @ 175./SF	LAND COST[1]	TOTAL COST
				PER FTE	TOTAL NSM				PER FTE	TOTAL NSM				
Ryerson		11,019.1	90,970	11.1	122,276.5	(31,306.5)								
Toronto														
- St George		25,570.8	377,977	15.3	390,358.0	(12,381)								
- Erindale		3616.2	37,172	9.9	35,933.9	12,38.1								
- Scarborough		3574.2	31,650	9.8	35,122.8	(3472.8)								
York														
- Main Campus		20818.5	148,505	10.2	211,699.6	(63,194.6)								
- Glendon		1842.7	14,898	9.6	17,626.1	(2,728.1)								
Total GTA	2,862,230	66,441.4	701,172	10.98 Avg.	813,016.9	(111,844.9)	4,864,262	111,392	10.98	1,223,084	(521,912) NSM or (5,617,998) NSF	$983,149,650	$226,061,700	$1,209,211,350

1 $\frac{55,137 \text{ net FTE}}{100 \text{ FTE/acre}}$ x $410,000/acre

Appendix E
Analysis of Social Services by Urban Structure Concept

FUTURE PLANNING CONTEXT

This study is meant to include a comparison of the three designated urban structure concepts in terms of future social service funding (both capital and operating) and future levels of service as they might vary with each concept. As discussed in the body of this background report, funding and programming for social services is not currently carried out in a comprehensive manner: funds and services are not allocated on any uniform basis across the GTA, nor are expenditures allocated on the basis of projected client need. Rather, in reality, funding and programming for social services occurs on an incremental basis, governed by immediate local, provincial and federal government policies, and administered by all levels of government as well as by private and volunteer organizations.

Without objective norms upon which to base future estimates and forecasts, and in light of the current dynamics of public policy affecting social service delivery, our approach has been to consult with selected practitioners and officials in the health and social service fields. A focus group was convened to review and debate current issues affecting this urban structure analysis. In addition to this focus group, others were also consulted in an attempt to best utilize available data and reflect current views which might influence the future direction of social service delivery. Those consulted included the following individuals, all of whom contributed generously and creatively to this background report:

Maureen Quigley, Maureen Quigley & Associates
Barry Lewis, ARA Consultants
Rick Kaufman, Durham District Health Council
John Fleming, CAO, Halton Region
John Butler, Peel District Health Council
Lorne Zon, Metro Toronto District Health Council
Barbara Moorhead, Community Services Council
Debbie Latter, D. W. Latter & Associates
Wally Beevor, Ontario Ministry of Education
Sandy Lang, Ontario Ministry of Community and Social Services

CAPITAL COST ESTIMATES

In many cases, the predominant basis for decisions on funding levels is currently a percentage increase over last year's approved budget. To elaborate, even in the apparently obvious programs where population density might determine capital costs, there is no direct link between the size of population and capital costs. Child

population, for example, would appear to directly relate to capital requirements in the child welfare sector; however, the most significant determinants of capital requirements instead are the approach to delivery selected by an individual board of directors, the ability and willingness of the Regional Municipality involved to finance a Children's Aid Society, the fund raising capacity of the organization, fire and safety requirements of municipalities for group foster care and group homes, and by-laws restricting the location of homes in local communities.

Taking this into account, this study has chosen as an illustration, to estimate the capital cost of social services to the year 2021, by projecting current per capita levels of capital spending. No attempt has been made to postulate the effect which any one urban structure concept would have in the future on this per capita capital forecast. This approach is justifiable when considering the current policy trend at all levels of government towards decentralization and deconcentration, i.e., emphasis on community level delivery. This will increasingly imply that regardless of urban structure, facilities will tend to be local in scale, and sized and located to serve smaller, community scaled service populations. Even in Concept 2 (Central) where populations would be more concentrated and densities higher than in Concepts 1 and 3, the number and size of social service facilities, and therefore the capital cost, is not expected to vary significantly; rather, these facilities will simply be located in closer proximity to one another and the population they serve.

The capital cost estimates for social and other health services are based on the GTA capital expenditure needs analysis for the years 1989 to 1993, adjusted to current dollar value.

An estimation of the future capital costs which takes into account the differences between the regions would require an examination of all services at a level of detail beyond the scope of this study. We therefore prepared per capita estimates based on parameters which are the same for all regions. This assumes that the economies of scale in areas of higher density would be counter balanced by higher land costs for equivalent facilities.

It was assumed that capital cost expenditures are dependent on both the existing population and the increase in population. Using this assumption, the factors for these two variables were determined by regression analysis. The relationships obtained in this manner account for 74% of the observed variations.

OPERATING COST COMPARISON

Capital costs are not a large portion of the total cost of services in the social service sector. With the possible exception of homes for the aged, the operating costs, particularly salaries and benefits, represent over 90 percent of the cost of provision of social programs. As noted above, the operating cost of delivering social services is (and will likely continue to be) significantly greater than capital expenditure. Variation between the concepts can be postulated qualitatively: Concept 1 (Spread) will be least efficient because there will be greater travel for services to reach the clients (e.g., meals on wheels, home care, etc.) and for clients to reach services (e.g., to community centres). This will require more staff time and more client time, therefore higher operating costs.

The opposite is apt to occur in Concept 2 (Central) where, in addition to achieving certain economies of scale and specialization from closer proximity to one another, travel times will be comparatively least.

Concept 3 (Nodal) would be expected to effect operative efficiencies between Concepts 1 and 2.

NEED FOR SOCIAL SERVICES RELATED TO DENSITY

A variety of opinions and research results are currently evident with respect to relating social service needs to residential density. A number of points are noteworthy:

- the need for social services exists at all densities, and within all demographic groupings; it is the nature of the need which apparently varies;

- greater demand for social services and more provision (i.e., expenditure per capita) seems to occur at higher densities, yet this is not necessarily related to needs caused by density itself, but by factors associated with higher densities. For example, it is in older, more dense urban areas that one often finds more political demand and more political will to expend funds for social services; people who need social services are logically attracted to such areas where they find more and higher levels of service and where such services (and facilities) are more generally acceptable as part of the mix;

- traditionally therefore, the voluntary and private sectors are often more established, better funded and generally more

experienced in higher density areas and thus more active and accessible;

- as diversification and urbanization has gradually spread within the GTA, so has the extension of social services, and this growth has not uniformly followed increases in residential density;

- notwithstanding the above points, the urban poor have tended to live (more efficiently) at higher densities and those services aimed at serving them have likewise tended to concentrate in dense urban areas.

Taking the above points into account, it is realistic to assume that limited funding will tend to continue to favour those living in more dense areas and that the delivery of current social services will continue to be greatest and most efficient in concentrated urban centres or nodes served by efficient public transportation.

Appendix F
Analysis of Culture and Recreation Facilities By Urban Structure Concept

BACKGROUND

Compared with most other human services the provision of cultural and recreation services to accommodate local communities and neighbourhoods is generally **capital intensive.** Although service programs are annually funded, the capital cost of active parks and playgrounds, arenas, community halls, gyms, swimming pools, etc., is also significant, particularly in newly developing communities where population is growing.

In older, more established built up areas where the population is relatively stable, there is less demand for additional facilities and the needs of the more gradual population growth are largely met by increased utilization of the existing network of facilities.

Thus **per capita annual expenditure** for capital facilities is not constant throughout the GTA but rather, tends to be higher in suburban growth communities compared with older more stable ones. The table below illustrates this for 8 sample municipalities in the GTA ranging from Toronto (population of 608,000 and average capital expenditure of $20 per capita) to Whitby (population 45,000 and average capital expenditure of $38 per capita).

POPULATION RELATED TO CAPITAL EXPENDITURES FOR CULTURE AND RECREATION FACILITIES (CURRENT): 8 SAMPLE MUNICIPALITIES IN THE GTA

Municipality	Average Population 1984-87	Average Capital Expenditure 1984-87	Average Capital Expenditure Per Capita 1984-87
Toronto	608,000	12.2 m	20.1
North York	552,323	9.1 m	16.4
Mississauga	365,630	10.1 m	27.7
York	133,066	1.0 m	8.1
Oshawa	121,205	2.6 m	21.4
Burlington	116,710	3.2 m	27.5
Markham	111,174	5.5 m	49.8
Whitby	45,716	1.7 m	37.8

CAPITAL COST ESTIMATES

The capital cost estimates for culture and recreational services are based on the GTA capital expenditure needs analysis for the years 1989 to 1993, adjusted to current dollar value.

An estimation of the future capital costs which takes into account the differences between the regions would require an examination of all services at a level of detail beyond the scope of this study. We therefore prepared per capita estimates based on parameters which are the same for all regions. This assumes that the economies of scale in areas of higher density would be counter balanced by higher land costs for equivalent facilities.

It was assumed that capital cost expenditures are dependent on both the existing population and the increase in population. Using this assumption, the factors for these two variables were determined by regression analysis. The relationships obtained in this manner account for 67% of the observed variations.

SPACE STANDARDS

Standards for community open space vary widely among municipalities in the GTA. The table below illustrates the 10 municipalities sampled. These standards tend to be in part influenced by such factors as the age of the community and the availability and affordability of land for open space. In newer developing communities where standards are in place, they are generally enforced as land contributions from developers and the cost is passed on to new home buyers. In older communities standards have evolved over time and often reflect the realities of scarce land.

ACTIVE OPEN SPACE STANDARDS (CURRENT):

A SAMPLE OF 10 MUNICIPALITIES IN THE

GREATER TORONTO AREA

ACRES PER 1000 POPULATION

	NEIGHBOUR-HOOD	COMMUNITY	CITY	TOTAL
1. Toronto		3.5		3.5 Acres
2. York	1.25	-	-	1.25
3. North York		2.5		
4. Mississauga	1.5	1.0	2.5	5.0
5. Oshawa	2.0	2.0	6.0	10.0
6. Markham	3.0	2.0	2.5	7.5
7. Burlington		6.3		
8. Whitby	-	-	2.0	2.0
9. Pickering		3.5		3.5
10.Newcastle	2.0	1.5	6.0	9.5

Regardless of community size however, provision of additional active open space in the future is expected to largely be financed by new development, and standards (e.g. acres per capita) are expected to be highest in areas of new growth and least density.

Appendix G
Analysis of Protection (Fire, Police, Ambulance) Services by Urban Structure Concept

RESPONSE TIME

The primary factor determining costs and levels of protection service is response time. Public expectations and standards of response vary between communities, and are often related to the age and density of the community. People in rural or new suburban areas often do not expect or demand as high a response time as does the population of an older, more dense urban community. Expenditures per capita generally reflect these patterns of public expectations, standards and demand.

Response time is determined by distance, the traffic capacity of the streets, and the street patterns. Assuming travel times are standard within each travel zone, a more concentrated urban pattern (i.e., Concepts 2, Central) will provide the highest response times to the most people and achieve the highest level of utilization of facilities and personnel, i.e., highest operating efficiency.

CAPITAL COST

The capital cost estimates for protection services are based on the GTA capital expenditure needs analysis for the years 1989 to 1993, adjusted to current dollar value.

An estimation of the future capital costs which takes into account the differences between the regions would require an examination of all services at a level of detail beyond the scope of this study. We therefore prepared per capita estimates based on parameters which are the same for all regions. This assumes that the economies of scale in areas of higher density would be counter balanced by higher land costs for equivalent facilities.

It was assumed that capital cost expenditures are dependent on both the existing population and the increase in population. Using this assumption, the factors for these two variables were determined by regression analysis. The relationships obtained in this manner account for 91% the observed variations.

FIRE

Fire protection is generally a municipal service and therefore standards will vary among municipalities depending upon demand and local funding policies.

While the incidence and severity of fires may increase with density, this will tend to increase utilization (operating) rather than capital (facilities) costs, and then only marginally.

AMBULANCE

Ambulance services are funded by the provincial government, and administered by the municipal government in some cases and by private contract services in other cases. Ambulances are more efficiently utilized in more dense, urban areas both in response to emergency calls and to transport immobile patients between institutions (i.e., between nursing home and hospital, between secondary and tertiary hospitals, etc.).

POLICE

The majority of protection expenditures go to the capital and (to a much greater extent) operating cost of policing. This is now generally a regional responsibility within the GTA, augmented by provincial and federal services.

Courts and correction services are not included in this analysis.

Policing costs are affected by a number of factors and vary significantly from municipality to municipality. Factors which impinge on these costs include:

- **Traffic:** urban structures which are characterized by high levels of traffic flow require higher levels (and hence costs) of policing service. In this regard Concept 1 (Spread) ranks highest and Concept 2 (Central) lowest.

- **Density:** in general, the higher the density, the higher the police population ratio required for policing services and hence the higher the per capita costs of policing. In high population density areas, the standard provincial government policing grant ($50 per household) may cover as little as 10% of the police budget (compared to 40% - 50% of the police budget in less dense areas). In this regard Concept 1 (Spread) ranks highest and Concept 2 (Central) lowest.

- **Activity Level:** in situations where a "core" employment area is surrounded by outlying residential areas, the outlying

residential areas have significantly lower populations during the day and hence fewer requirements for policing at that time (even though the provincial grant is based on households). Conversely, the employment "core" has significantly higher population during the day. Many of these people are not residents and, therefore, the area (or municipality) must provide the necessary level of policing services, while not benefitting from the provincial grant at this level. Safe (and hence less costly to police) urban structure combines a mix of both residential and employment settings. Residential settings ensure that people feel some sense of ownership and concern for their community and helps to protect against "empty streets" which are seen as policing problems because they can attract crime (particularly if such streets are near entertainment attractions frequently visited by "visitors" living outside the area). The "dead city-centre" which has characterized a number of American cities is a manifestation of this concept. In this regard Concept 1 (Spread) ranks lowest and Concept 2 (Central) highest, assuming a balanced job-residential mix is achieved. Concept 3 (Nodal) also ranks relatively high in having the potential to achieve both a sense of community ownership and a job-residential mix.

The Government of Ontario is committed to the enhancement of effective and efficient policing services through the development of community-based policy. Concept 3 (Nodal) has the highest potential for reinforcing the concept of community which will help this process.